BLUE EARTH COUNTY HIGHWAY DEPARTMENT
35 MAP DRIVE, MANKATO, MINNESOTA 56001

**********PROPOSAL**********

FOR HIGHWAY CONSTRUCTION
AND MAINTENANCE PROJECTS WITH
BIDS RECEIVED UNTIL 1:30 O'CLOCK P.M. ON November 19, 2010

PROPOSAL OF _____
(NAME OF FIRM)

_____
(ADDRESS)

_____
(AREA CODE) TELEPHONE NUMBER

TO FURNISH AND DELIVER ALL MATERIALS AND TO PERFORM ALL WORK IN ACCORDANCE WITH THE CONTRACT, THE PLANS AND THE APPROVED DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION", 2005 EDITION, EXCEPT AS STATED OTHERWISE IN THE SPECIAL PROVISIONS WHICH ARE PART OF THIS PROPOSAL, FOR

STATE PROJECT NO. **S.A.P. 07-598-26**

MINNESOTA PROJECT NO.

LOCATION: On County Road 152, 0.5 miles South of TH 30 about 6.5 miles west of Mapleton over the Maple River

TYPE OF WORK: Bridge #07557, Grading, and Surfacing

LENGTH: 0.549 Miles

STARTING DATE: See Special Provisions

COMPLETION DATE: See Special Provisions

NOTICE TO BIDDERS: In submitting a bid, you must return this complete proposal. You must initial changes made in the Schedule of Prices in the Proposal and acknowledge addenda on the back cover sheet.

I certify that this Proposal was prepared by me or under my direct supervision, and that I am a licensed professional engineer under the laws of the State of Minnesota.

Allan Rosberg

License Number 14720 Date: 22 Oct 10

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BID RIGGING IS A SERIOUS CRIME. IF YOU HAVE ANY INFORMATION CONCERNING COLLUSIVE BIDDING, EVEN A REQUEST TO SUBMIT A COMPLIMENTARY BID, PLEASE CALL THE MINNESOTA ATTORNEY GENERAL'S OFFICE AT TELE. NO. 651-296-1796

To Local Agency (Board of Commissioners/City Council):

According to the advertisement of Local Agency inviting proposals for the improvement of the section of highway hereinbefore named, and in conformity with the Contract, Plans, Specifications and Special Provisions pertaining thereto, all on file in the office of the (Auditor/Clerk) of Local Agency:

(I)(We) hereby certify that (I am)(we are) the only person(s) interested in this proposal as principal(s); that this proposal is made and submitted without fraud or collusion with any other person, firm or corporation at all; that an examination has been made of the site of the work and the Contract form, with the Plans, Specifications and Special Provisions for the improvement.

(I)(We) understand that the quantities of work shown herein are approximate only and are subject to increase or decrease; that all quantities of work, whether increased or decreased within the limits specified in Mn/DOT 1903, are to be done at the unit prices shown on the attached schedule; that, at the time of opening bids, totals only will be read, but that comparison of bids will be based on the correct summation of item totals obtained from the unit prices bid, as provided in Mn/DOT 1301.

(I)(We) propose to furnish all necessary machinery, equipment, tools, labor and other means of construction and to furnish all materials specified, in the manner and at the time prescribed, all according to the terms of the Contract and Plans, Specifications, and the Special Provisions forming a part of this.

(I)(We) further propose to do all Extra Work that may be required to complete the contemplated improvement, at unit prices or lump sums to be agreed upon in writing before starting such work, or if such prices or sums cannot be agreed upon, to do such work on a Force Account basis, as provided in Mn/DOT 1904.

(I)(We) further propose to execute the form of Contract within 10 days after receiving written notice of award, as provided in Mn/DOT 1306.

(I)(We) further propose to furnish a payment bond equal to the Contract amount, and a performance bond equal to the Contract amount, with the aggregate liability of the bond(s) equal to twice the full amount of the Contract if the contract is less than or equal to five million dollars ($5,000,000.00), or if the contract is in excess of five million dollars ($5,000,000.00) the aggregate liability shall be equal to the amount of the contract, as security for the construction and completion of the improvement according to the Plans, Specifications and Special Provisions as provided in Mn/DOT 1305.

(I)(We) further propose to do all work according to the Plans, Specifications and Special Provisions, and to renew or repair any work that may be rejected due to defective materials or workmanship, before completion and acceptance of the Project by Local Agency.

(I)(We) agree to all provisions of Minnesota Statutes, Section 181.59.

(I)(We) further propose to begin work and to prosecute and complete the same according to the time schedule set forth in the Special Provisions for the improvement.

(I)(We) assign to Local Agency all claims for overcharges as to goods and materials purchased in connection with this Project resulting from antitrust violations that arise under the antitrust laws of the United States and the antitrust laws of the State of Minnesota. This clause also applies to subcontractors and first tier suppliers under this Contract.

NOTICE TO ALL BIDDERS

To report bid rigging activities call:

1-800-424-9071

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

NOTICE TO BIDDERS

SUSPENSIONS/DEBARMENTS

July 6, 2010

DEPARTMENT OF TRANSPORTATION

NOTICE OF SUSPENSION

NOTICE IS HEREBY GIVEN that the Department of Transportation (Mn/DOT) has ordered that the following vendors be suspended effective December 28, 2009, until final disposition of the hearing or hearing appeal:

Riley Bros. Companies Inc. and its affiliates, Morris MN
Riley Bros. Construction Inc. and its affiliates, Morris MN
Riley Bros. Properties, LLC, and its affiliates, Morris MN
Riley Bros. Utilities, Inc. dba/Chris Riley Utilities, Inc. and its affiliates, Morris MN

NOTICE OF DEBARMENT

NOTICE IS HEREBY GIVEN that the Department of Transportation (Mn/DOT) has ordered that the following vendors be debarred for a period of three (3) years effective February 24, 2010 until February 24, 2013:

Joseph Edward Riley, Morris, MN
John Thomas Riley, Morris, MN

Minnesota Statutes, Section 161.315, prohibits the Commissioner, counties, towns or home rule or statutory cities from awarding or approving the award of a contract for goods or services to a person who is suspended or debarred; including

1) any contract under which a debarred or suspended person will serve as a subcontractor or material supplier,
2) any business or affiliate which the debarred or suspended person exercises substantial influence or control, and
3) any business or entity which is sold or transferred by a debarred person remains ineligible during the period of the seller's or transfer's debarment.

NOTICE TO BIDDERS

SUSPENSIONS/DEBARMENTS

July 6, 2010

DEPARTMENT OF ADMINISTRATION

The Department of Administration in accordance with Minnesota Rules 1230.1150 has debarred and disqualified the following persons and businesses from entering into or receiving a State of Minnesota contract.

NAME	DATE OF DEBARMENT
Joseph Edward Riley East 7th Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
John Thomas Riley East 7th Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
Riley Bros. Construction, Inc. East 7th Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
Riley Bros. Companies Inc. East 7th Street & Highway 59 Bypass Morris, Minnesota 56267	November 9, 2009 Through November 9, 2012
Polyphase Electric Company 2515 West Superior Street Duluth, MN 55816-0151	May 5, 2010 Through May 5, 2012
Frances Harkonen 2515 West Superior Street Duluth, MN 55816-0151	May 5, 2010 Through May 5, 2012

Minnesota Rules Part 1230.1150, Subpart 6 requires the Materials Management Division to maintain a master list of all suspensions and debarments. The master list must retain all information concerning suspensions and debarments as a public record for at least three years following the end of a suspension or debarment. This list can be found at: http://www.mmd.admin.state.mn.us/debarredreport.asp

STATE FUNDED CONSTRUCTION CONTRACTS
SPECIAL PROVISIONS DIVISION A - LABOR
April 7, 2006

I. PREAMBLE

It is in the public interest that public buildings and other public works projects be constructed and maintained by the best means and the highest quality of labor reasonably available and that persons working on public works projects be compensated according to the real value of the services they perform.[1]

Therefore, the department shall administer this contract pursuant to the **State of Minnesota Statutes and Rules, MN/DOT's Standard Specifications for Construction, MN/DOT's Contract Administration Manual, MN/DOT's State Aid Manual** and applicable federal labor regulations.

II. DEFINITIONS[2]

A. **Contract**: The written agreement between the contracting authority and the prime contractor setting forth their obligations, including, but not limited to, the performance of the work, the furnishing of labor and materials, the basis of payment, and other requirements contained in the contract documents.

B. **Contracting Authority**: The political subdivision, governmental body, board, department, commission, or officer making the award and execution of contract as the party of the first part.

C. **Contractor**: The term "contractor" in these provisions shall include the prime contractor, subcontractor, agent, or other person doing or contracting to do all or part of the work under this contract.[3]

D. **Department**: The Department of Transportation of the State of Minnesota, or the political subdivision, governmental body, board, commission, office, department, division, or agency constituted for administration of the contract work within its jurisdiction.

E. **First Tier Subcontractor**: An individual, firm, corporation, or other entity to which the prime contractor sublets part of the contract.

F. **Independent Truck Owner/Operator (ITO)**: An individual, partnership, or principal stockholder of a corporation who owns or holds a vehicle under lease and who contracts that vehicle and the owner's services to an entity that provides construction services to a public works project.[4]

G. **Laborer or Mechanic**: A worker in a construction industry labor class identified in or pursuant to Minnesota Rules 5200.1100, Master Job Classifications.[5]

H. **Plan**: The plan, profiles, typical cross-sections, and supplemental drawings that show the locations, character, dimensions, and details of the work to be done.

I. **Prime Contractor**: The individual, firm, corporation, or other entity contracting for and undertaking prosecution of the prescribed work; the party of the second part to the contract, acting directly or through a duly authorized representative.

J. **Project**: The specific section of the highway, the location, or the type of work together with all appurtenances and construction to be performed under the contract.

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[1] Minnesota Statute 177.41
[2] MN/DOT Standard Specifications for Construction, Section 1103
[3] Minnesota Statute 177.44, Subdivision 1
[4] Minnesota Rules 5200.1106, Subpart 7(A)
[5] Minnesota Rules 5200.1106, Subpart 5(A)

K. **Second Tier Subcontractor**: An individual, firm, corporation, or other entity to which a first tier subcontractor sublets part of the contract.

L. **Special Provisions**: Additions and revisions to the standard and supplemental specifications covering conditions peculiar to an individual project.

M. **Specifications**: A general term applied to all directions, provisions, and requirements pertaining to performance of the work.

N. **Subcontractor**: An individual, firm, corporation, or other entity to which the prime contractor or subcontractor sublets part of the contract.

O. **Substantially In Place**: Mineral aggregate is deposited on the project site directly or through spreaders where it can be spread from or compacted at the location where it was deposited.[6]

P. **Trucking Broker**: An individual or business entity, the activities of which include, but are not limited to: contracting to provide trucking services in the construction industry to users of such services, contracting to obtain such services from providers of trucking services, dispatching the providers of the services to do work as required by the users of the services, receiving payment from the users in consideration of the trucking services provided and making payment to the providers for the services.[7]

Q. **Trucking Firm/Multiple Truck Owner (MTO)**: Any business entity that owns more than one vehicle and hires the vehicles out for services to brokers or contractors on public works projects.[8]

R. **Work**: The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient to the successful completion of the project and the carrying out of all the duties and obligations imposed by the contract upon the contractor. Also used to indicate the construction required or completed by the contractor.

III. SCOPE – SPECIAL PROVISIONS DIVISION A & CONTRACT

A. These provisions shall apply to this contract, which is funded in whole or part with state funds.[9]

B. These provisions shall apply to the prime contractor and all subcontractors contracting to do all or part of the work under this contract.[10]

C. The provisions established in this document do not necessarily represent all federal, state, and local laws, ordinances, rules and regulations. It is the responsibility of the prime contractor to inform itself and all subcontractors about other regulations that may be applicable to this contract.

D. The prime contractor is responsible to ensure that each subcontractor performing work under this contract receives copies of all required contract provisions. These provisions shall be incorporated into written subcontracts and must be displayed on the poster board.[11]

E. The department shall administer this contract in accordance with all applicable state statutes and rules,[12] along with the plans, specifications and provisions, which are incorporated into and found elsewhere in this contract.

F. An unpublished decision from the Minnesota Court of Appeals affirms the authority of the Minnesota Commissioner of Transportation to enforce the Minnesota Prevailing Wage Law on a case-by-case basis.[13]

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[6] Minnesota Rules 5200.1106, Subpart 5(C)
[7] Minnesota Rules 5200.1106, Subpart 7(C)
[8] Minnesota Rules 5200.1106, Subpart 7(B)
[9] Minnesota Statute 177.41
[10] Minnesota Statute 177.44, Subdivision 1
[11] Minnesota Statute 177.44, Subdivision 5
[12] Minnesota Rules 8820.3000, Subpart 2
[13] Minnesota Court of Appeals Case Number: C6-97-1582

G. For additional information refer to: www.dot.state.mn.us/const/labor/.

IV. PAYROLLS AND STATEMENTS

A. All contractors shall submit a payroll statement to the department.[14] The statement shall be submitted based on the contractor's payment schedule. If a contractor pays its employees weekly, a payroll statement shall be submitted weekly. If a contractor pays its employees biweekly, a payroll statement shall be submitted biweekly.[15] All contractors shall pay its employees at least once every 15 days on a date designated in advance by the employer.[16] Each statement submitted shall include all employees that performed work under this contract and provide at a minimum the following information:[17]

1. Contractor's name, address, and telephone number.
2. State project number.
3. Payroll report number.
4. Project location.
5. Workweek ending date.
6. Name, social security number, and home address for each employee.
7. Labor classification(s) and/or three-digit code for each employee.
8. Hourly straight time and overtime wage rates paid to each employee.
9. Daily and weekly hours worked in each labor classification, including overtime hours for each employee.
10. Authorized legal deductions for each employee.
11. Project gross amount, weekly gross amount and net wages paid to each employee.

B. Payroll records may be submitted in any form provided it includes all the information contained in **Subpart A (1 - 11)** of this section. However, contractors needing a payroll form may utilize the "front side" of the **U.S. Department of Labor's, WH-347 - Payroll Form**. This form is available by visiting the Labor Compliance website.[18]

C. All payroll records must be accompanied with a completed and signed **MN/DOT, 21658 - Statement of Compliance Form**.[19]

D. The prime contractor is responsible for assuring that its payroll records and those of all subcontractors include all employees that performed work under this contract and accurately reflect the hours worked, regular and overtime rates of pay and classification of work performed.[20]

E. The prime contractor is responsible to maintain all certified payroll records, including those of all subcontractors, throughout the course of a construction project and retain all records for a period of three years after the final contract voucher has been issued.[21]

F. At the end of each pay period, each contractor shall provide every employee, in writing, an accurate, detailed earnings statement.[22]

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[14] Minnesota Statute 177.44, Subdivision 7
[15] Mn/DOT Contract Administration Manual, Section .320
[16] Minnesota Statute 181.10
[17] Minnesota Rules 5200.1106, Subpart 10 and Minnesota Statute 177.30
[18] www.dot.state.mn.us/const/labor/
[19] Minnesota Rules 5200.1106, Subpart 10
[20] Minnesota Statute 177.30(1)(2)(3)(4)
[21] Minnesota Statute 177.30(4)
[22] Minnesota Statute 181.032

G. Upon request from the Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of payroll records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.[23]

H. At the department's discretion, the project engineer may administer the submission of payroll records according to MN/DOT's Payroll Maintenance Program. The guidelines for the implementation and administration of this program are outlined in the **MN/DOT Contract Administration Manual, Section A(4)(d)**.

I. If, after written notice, the prime contractor fails to submit its payroll reports and certification forms and those of any subcontractor, the department may implement the actions prescribed in section **XVI (NON-COMPLIANCE AND ENFORCEMENT).**

V. WAGE RATES

A. The prime contractor is responsible to ensure that its workers and those of all subcontractors are compensated according to the MN/DLI state prevailing wage determination(s) incorporated into and found elsewhere in this contract. All contractors shall pay each worker the required minimum total hourly wage rate for all hours worked on the project and for the appropriate classification of labor.

1. State highway and heavy wage determinations are issued for ten separate regions throughout the state of Minnesota. If the contract work is located in more than one region, the applicable wage decision for each region shall be incorporated into and found elsewhere in this contract. If this contract contains multiple state highway and heavy wage determinations, there shall be only one standard of hours of labor and wage rates. [24]

2. State commercial wage determinations are issued for each county throughout the state of Minnesota. If the contract work is located in more than one county, the applicable wage determination for each county shall be incorporated into and found elsewhere in this contract. If this contract contains multiple state commercial wage determinations, there shall be only one standard of hours of labor and wage rates.[25]

B. Wage rates listed in the state wage determination(s) contain two components: the hourly basic rate and the fringe rate; together they equal the total prevailing wage rate. A contractor shall compensate a worker at a minimum, a combination of cash and fringe benefits equaling the total prevailing wage rate.[26]

C. The applicable certified wage decision(s) incorporated into and found elsewhere in this contract remain in effect for the life of this contract. The wage decision(s) do not necessarily represent the workforce that can be obtained at the rates certified by the MN/DLI. It is the responsibility of the prime contractor and any subcontractor to inform themselves about local labor conditions and prospective changes or adjustments to the wage rates. No increase in the contract price shall be allowed or authorized due to wage rates that exceed those incorporated into this contract.

D. A contractor shall not reduce a worker's private, regular rate of pay when the wage rate certified by the MN/DLI is less than the worker's normal hourly wage.[27]

E. From the time a worker is required to report for duty at the project site until the worker is allowed to leave the site, no deductions shall be made from the worker's hours for any delays of less than twenty consecutive minutes.[28]

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[23] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10
[24] Minnesota Statute 177.44, Subdivision 4
[25] Minnesota Statute 177.44, Subdivision 4
[26] Minnesota Statute 177.42, Subdivision 6
[27] Minnesota Statute 181.03, Subdivision 1(2)
[28] Minnesota Rules 5200.0120,Subpart 1

F. In situations where a delay may exceed twenty consecutive minutes and the contractor requires a worker to remain on the premises or so close to the premises that the worker cannot use the time effectively for the worker's own purposes, the worker is considered "on-call"[29] and shall be compensated in accordance with **Subpart B** of this section, unless the worker is allowed or required to leave the project site.

G. A contractor making payment to an employee, laborer, mechanic, worker, or truck owner-operator shall not accept a rebate for the purpose of reducing or otherwise decreasing the value of the compensation paid.[30]

H. Any employee who knowingly permits a contractor to pay less than the total prevailing wage or gives up any part of the compensation to which the employee is entitled may be subject to penalties.[31]

VI. BONA FIDE FRINGE BENEFITS

A. A "funded" fringe benefit plan is one that allows the contractor to make irrevocable contributions on behalf of an employee to a financially responsible trustee, third person, fund, plan or program, without prior approval from the U.S. Department of Labor. Types of "funded" fringe benefits may include, but are not limited to: pension, health and life insurance.[32]

B. An "unfunded" fringe benefit plan or program is one that allows the contractor to furnish an in-house benefit on behalf of an employee. The cost to provide the benefit is funded from the contractor's general assets rather than funded by contributions made to a trustee, third person, fund, plan or program. Types of "unfunded" fringe benefits may include, but are not limited to: holiday plans, vacation plans and sick plans.[33]

C. Credit toward the total prevailing wage rate shall be determined for each individual employee and is allowed for bona fide fringe benefits that:[34]

1. include contributions irrevocably made by a contractor on behalf of an employee to a financially responsible trustee, third person, fund, plan, or program;
2. are legally enforceable;
3. have been communicated in writing to the employee; and
4. are made available to the employee once he/she has met all eligibility requirements.

D. No credit shall be allowed for benefits required by federal, state or local law, such as: worker's compensation, unemployment compensation, and social security contributions.[35]

E. Upon request from the Minnesota Department of Labor and Industry (MN/DLI) or the Department, the prime contractor shall promptly furnish copies of fringe benefit records for its workers and those of all subcontractors, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.[36]

F. In addition to the requirements set forth in **Subpart C** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state fringe benefit regulations that may be applicable to this contract.

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[29] Minnesota Rules 5200.0120, Subpart 2
[30] Minnesota Rules 5200.1106, Subpart 6
[31] Minnesota Statute 177.44, Subdivision 6
[32] 29 CFR Parts 5.26 and 5.27
[33] 29 CFR Part 5.28
[34] 29 CFR Part 5.23
[35] 29 CFR Part 5.29(f)
[36] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

G. Contractors shall submit a completed and signed **MN/DOT, 21658 - Statement of Compliance Form,** identifying any fringe contributions made on behalf of a worker.[37] The form must be submitted in accordance with section **IV (PAYROLLS AND STATEMENTS), Subparts A and C.**

H. Pursuant with ***Minnesota Statute 181.74, Subdivision 1***, a contractor that is obligated to deposit fringe benefit contributions on behalf of its employees into a financially responsible trustee, third person, fund, plan, or program and fails to make timely contributions may be guilty of a gross misdemeanor. A contractor found in violation of the above-mentioned statute shall compel the department to take such actions as prescribed in section **XVI, (NON-COMPLIANCE AND ENFORCEMENT).**

VII. OVERTIME

A. A contractor shall not permit or require a worker to work longer than the prevailing hours of labor unless the worker is paid for all hours in excess of the prevailing hours at a rate of at least 1-1/2 times the hourly basic hourly rate of pay.[38] The prevailing hours of labor is defined as not more than 8 hours per day or more than 40 hours per week.[39]

B. In addition to the requirements set forth in **Subpart A** of this section, it is the responsibility of the prime contractor and any subcontractor to inform themselves about other federal and state overtime regulations that may be applicable to this contract.

VIII. LABOR CLASSIFICATIONS

All contractors shall refer to the state wage determination(s) incorporated into and found elsewhere in this contract or the Master Job Classification List[40] to obtain an applicable job classification. If a contractor cannot determine an appropriate job classification, state law requires that the worker be assigned a job classification that is the "same or most similar".[41] Contractors needing clarification shall contact MN/DLI or the MN/DOT Labor Compliance Unit at (651) 296-6503.

IX. INDEPENDENT CONTRACTORS, OWNERS, SUPERVISORS AND FOREMAN

A. An independent contractor performing work as a laborer or mechanic is subject to the contract prevailing wage requirements[42] for the classification of work performed and shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS)**. In order to ensure compliance, the department may examine the subcontract agreement to determine if the bid price submitted covers the applicable prevailing wage rate for the number of hours worked, along with other records, deemed appropriate by the department.[43]

B. Pursuant with state regulations, owners, supervisors and foreman performing work under the contract[44] shall be compensated in accordance with section **V (WAGE RATES)**. Furthermore, the prime contractor and any subcontractor shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS).**

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[37] Minnesota Rules 5200.1106, Subpart 10
[38] Minnesota Statute 177.44, Subdivision 1
[39] Minnesota Statute 177.42, Subdivision 4
[40] Minnesota Rules 5200.1100
[41] Minnesota Statute 177.44, Subdivision 1
[42] 29 CFR Part 5.2(o) and Minnesota Statute 177.41
[43] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10
[44] Minnesota Statute 177.44, Subdivision 1

X. APPRENTICES, TRAINEES AND HELPERS

A. An apprentice is not subject to the state wage decision(s) incorporated into and found elsewhere in this contract, provided the contractor can demonstrate compliance with **Subparts (1 - 4)** of this section: [45]

1. The apprentice is performing the work of his/her trade.
2. The apprentice is registered with the U.S. DOL Bureau of Apprenticeship and Training or MN/DLI Division of Voluntary Apprenticeship.
3. The apprentice is compensated according to the rate specified in the program for the level of progress.
4. The ratio of apprentices to journeyman workers on the project is not greater than the ratio permitted for the contractor's entire work force under the registered program.[46]

B. If a contractor fails to demonstrate compliance with the terms established in **Subpart A (1 – 4)** of this section, the contractor shall compensate the worker not less than the applicable total prevailing wage rate for the actual work performed.[47]

C. A trainee and a helper are not exempt under state law; the contractor shall assign the trainee or helper a job classification that is the "same or most similar"[48] and compensate the trainee or helper for the actual work performed regardless of the trainee's or helper's skill level.

XI. SUBCONTRACTING PART OF THIS CONTRACT[49]

A. If the prime contractor intends to sublet any portion of this contract, it shall complete and submit a **MN/DOT, TP-21834, Request To Sublet Form** to the project engineer 10 days prior to the first day of work for any subcontractor.

B. The prime contractor shall not subcontract any portion of this contract without prior written consent from the project engineer.

C. The prime contractor's organization shall perform work amounting to not less than 40 percent of the total original contract cost. However, contracts with Disadvantaged Business Enterprise (DBE) or Targeted Group Business (TGB) established goals, or both, the contractor's organization shall perform work amounting to not less than 30 percent of the total original contract cost.

D. A first tier subcontractor shall not subcontract any portion of its work under this contract unless approved by the prime contractor and the project engineer. In addition, a first tier subcontractor may only subcontract up to 50% of its original subcontract.

E. A second tier subcontractor shall not subcontract any portion of its work under this contract.

F. Written consent to subcontract any portion of this contract does not relieve the prime contractor of liabilities and obligations under the contract and bonds.

G. Contractors shall not subcontract with or purchase materials or services from a debarred or suspended person.[50]

XII. POSTER BOARDS

A. The prime contractor shall construct and display a poster board, which contains all required posters, is complete, accurate, legible and accessible to all workers from the first day of work

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[45] Minnesota Rules 5200.1070
[46] MN/DOLI Division of Apprenticeship – April 6, 1995 Memorandum from Jerry Briggs, Director
[47] Minnesota Rules 5200.1070, Subpart 3
[48] Minnesota Statute 177.44, Subdivision 1
[49] MN/DOT Standard Specifications for Construction, Section 1801
[50] Minnesota Statute 161.315, Subdivision 3(3)

until the project is 100 percent complete.[51] The prime contractor is not allowed to place a poster board at an off-site location.

B. The prime contractor can obtain the required posters by contacting MN/DOT at (651) 366-3091. The prime contractor will need to furnish its name, mailing address, the type of posters (state-aid) and the quantity needed.

C. Refer to the poster board section of the Labor Compliance website to obtain applicable contact information for each poster. The link to the website can be found in section **III (SCOPE – SPECIAL PROVISIONS DIVISION A & CONTRACT), Subpart G** of these provisions.

XIII. EMPLOYEE INTERVIEWS

At any time the prime contractor shall permit representatives from MN/DLI or the Department to interview its workers and those of any subcontractor during working hours on the project.[52]

XIV. TRUCKING / OFF-SITE FACILITIES

A. The prime contractor is responsible to ensure that its workers and those of all subcontractors, are compensated in accordance with the state wage determination(s) incorporated into and found elsewhere in this contract for the following work duties:

1. The processing or manufacturing of material, including the hauling of material to and from a prime contractor's material operation that is not a separate commercial establishment.[53]
2. The processing or manufacturing of material, including the hauling of material to and from an off-site material operation that is not considered a commercial establishment.[54]
3. The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project even if the truck leaves the work site at some point.[55]
4. The delivery of materials from a non-commercial establishment to the project and the return haul.[56]
5. The delivery of materials from another construction project site to the public works project and the return haul, either empty or loaded. Construction projects are not considered commercial establishments.[57]
6. The hauling required to remove any materials from the project to a location off the project site and the return haul, either empty or loaded from other than a commercial establishment.[58]
7. The delivery of mineral aggregate materials from a commercial establishment, which is deposited "substantially in place" and the return haul, either empty or loaded.[59]

B. The work duties prescribed in **Subpart A (1 - 7)** of this section do not represent all possible hauling activities and/or other work duties that may be performed under this contract. It is the responsibility of the prime contractor to inform itself and all subcontractors about other applicable job duties that may be subject to the contract labor provisions. Refer to the Labor Compliance website for additional information regarding trucking regulations.

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[51] Minnesota Statute 177.44, Subdivision 5
[52] MN/DOT Standard Specifications for Construction, Section 1511
[53] ALJ Findings of Fact, Conclusions of Law, and Recommendation, Conclusions (7), Case #12-3000-11993-2
[54] Minnesota Rules 5200.1106, Subpart 3B(2)
[55] Minnesota Rules 5200.1106, Subpart 3B(1)
[56] Minnesota Rules 5200.1106, Subpart 3B(2)
[57] Minnesota Rules 5200.1106, Subpart 3B(3)
[58] Minnesota Rules 5200.1106, Subpart 3B(4)
[59] Minnesota Rules 5200.1106, Subpart 3B(5)(6)

C. A contractor acquiring trucking services from an ITO, MTO and/or Truck Broker to perform and/or provide "covered" hauling activities shall comply with the payment of the certified state truck rental rates,[60] which are incorporated into and found elsewhere in this contract.

D. Each month, in which hauling activities were performed under this contract, the prime contractor and all subcontractors shall submit a **MN/DOT, TP-90550 - Month-End Trucking Report** and **MN/DOT, TP-90551 - Statement of Compliance Form**, along with each ITOs, MTOs and/or Truck Brokers reports to the department.[61] The specifications regarding the dates for submission can be found near the bottom of the **MN/DOT, TP-90551 - Statement of Compliance Form.**

E. A Truck Broker contracting to provide trucking services in the construction industry may charge a reasonable broker fee to the provider of trucking services.[62] The prime contractor and any subcontractor contracting to receive trucking services shall not assess a broker fee.

F. A contractor with employee truck drivers shall adhere to the requirements established in sections **IV (PAYROLLS AND STATEMENTS); V (WAGE RATES); VI (FRINGE BENEFITS); VII (OVERTIME) and VIII (LABOR CLASSIFICATIONS).**

G. If after written notice, the prime contractor fails to submit its month-end trucking reports and certification forms and those of any subcontractor, MTO and/or Truck Broker, the department may take such actions as prescribed in section **XVI, (NON-COMPLIANCE AND ENFORCEMENT).**

XV. CHILD LABOR

A. Except as permitted under **Subpart B** of this section, no worker under the age of 18 is allowed to perform work on construction projects.[63]

B. In accordance with state law, a worker under the age of 18, employed in a corporation totally owned by one or both parents that is supervised by the parent(s), may perform work on construction projects.[64] However, if this contractor is subject to the federal Fair Labor Standards Act, a worker under the age of 18 is not allowed to perform work in a hazardous occupation.[65]

C. To protect the interests of the department, the project engineer may remove a worker that appears to be under the age of 18 from the construction project until the contractor or worker can demonstrate proof of age[66] and compliance with all applicable federal and/or state regulations.[67]

XVI. NON-COMPLIANCE AND ENFORCEMENT

A. The prime contractor shall be liable for any unpaid wages to its workers or those of any subcontractor, ITO, MTO and/or Truck Broker.[68]

B. If it is determined that a contractor has violated the state prevailing wage law, or any portion of this contract, the department after written notice, may implement one or more of the following sanctions:

1. Withhold or cause to be withheld from the prime contractor such amounts in considerations or assessments against the prime contractor, whether arising from this contract or other contract with the department.[69]

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[60] Minnesota Rules 5200.1106, Subpart 1
[61] Minnesota Rules 5200.1106, Subpart 10
[62] Minnesota Rules 5200.1106, Subpart 7(C)
[63] Minnesota Rules 5200.0910, Subpart F
[64] Minnesota Rules 5200.0930, Subpart 4
[65] 29 CFR Part 570.2(a)(ii)
[66] Minnesota Statute 181A.06, Subdivision 4
[67] MN/DOT Standard Specifications for Construction, Section 1701
[68] MN/DOT Standard Specifications for Construction, Section 1801
[69] MN/DOT Standard Specifications for Construction, Section 1906

2. The department may reject a bid from a prime contractor that has demonstrated continued or persistent noncompliance with the prevailing wage law on previous or current contracts with the department.[70]

3. The department may take the prosecution of the work out of the hands of the prime contractor, place the contractor in default and terminate this contract for failure to demonstrate compliance with these provisions.[71]

C. Any contractor who violates the state prevailing wage law is guilty of a misdemeanor and may be fined not more than $300 or imprisoned not more than 90 days or both. Each day that the violation continues is a separate offense.[72]

D. All required documents and certification reports are legal documents; willful falsification of the documents may result in civil action and/or criminal prosecution[73] and may be grounds for debarment proceedings.[74]

[70] Minnesota Statute 161.32, Subdivision 1(d)
[71] MN/DOT Standard Specifications for Construction, Section 1808
[72] Minnesota Statute 177.44, Subdivision 6
[73] Minnesota Statutes 16B, 161.315, Subdivision 2, 177.43,Subdivision 5 177.44, Subdivision 6, 609.63
[74] Minnesota Statute 161.315 and Minnesota Statute 609.63

NOTICE TO BIDDERS

Minnesota Statutes that require prompt payment to subcontractors:

471.425 Prompt payment of local government bills.

Subd. 1. Definitions. For the purposes of this section, the following terms have the meanings here given them.

(d) "Municipality" means any home rule charter or statutory city, county, town, school district, political subdivision or agency of local government. "Municipality" means the metropolitan council or any board or agency created under chapter 473.

Subd. 4a. Prompt payment to subcontractors.

Each contract of a municipality must require the prime contractor to pay any subcontractor within ten days of the prime contractor's receipt of payment from the municipality for undisputed services provided by the subcontractor. The contract must require the prime contractor to pay interest of 1-1/2 percent per month or any part of a month to the subcontractor on any undisputed amount not paid on time to the subcontractor. The minimum monthly interest penalty payment for an unpaid balance of $100 or more is $10. For an unpaid balance of less than $100, the prime contractor shall pay the actual penalty due to the subcontractor. A subcontractor who prevails in a civil action to collect interest penalties from a prime contractor must be awarded its costs and disbursements, including attorney's fees, incurred in bringing the action.

HIST: 1985 c 136 s 5; 1995 c 31 s 1

MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY PREVAILING WAGES FOR STATE FUNDED CONSTRUCTION PROJECTS

THIS NOTICE MUST BE POSTED ON THE JOBSITE IN A CONSPICUOUS PLACE

Construction Type: Highway and Heavy

Region Number: 07

Counties within region:

- BLUE EARTH-07
- FARIBAULT-22
- LESUEUR-40
- NICOLLET-52
- SIBLEY-72
- WASECA-81

Effective: 2009-12-07 Revised: 2010-04-21

This project is covered by Minnesota prevailing wage statutes. Wage rates listed below are the minimum hourly rates to be paid on this project.

All hours worked in excess of eight (8) hours per day or forty (40) hours per week shall be paid at a rate of one and one half (1 1/2) times the basic hourly rate.

Violations should be reported to:

Department of Transportation
Office of Construction
Transportation Building MS650
John Ireland Blvd
St. Paul, MN 55155
(651) 366-4209

Refer questions concerning the prevailing wage rates to:

Department of Labor and Industry
Prevailing Wage Section
443 Lafayette Road N
St Paul, MN 55155
(651) 284-5091
DLI.PrevWage@state.mn.us

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
101 LABORER, COMMON (GENERAL LABOR WORK)	2009-12-07	18.95	7.65	26.60
102 LABORER, SKILLED (ASSISTING SKILLED CRAFT JOURNEYMAN)	2009-12-07	22.31	12.88	35.19
	2010-05-01	23.16	13.63	36.79
103 LABORER, LANDSCAPING (GARDENER, SOD LAYER AND NURSERY OPERATOR)	2009-12-07	16.70	10.43	27.13
104 FLAG PERSON	2009-12-07	19.85	7.65	27.50

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
105 WATCH PERSON	2009-12-07	8.57	2.12	10.69
106 BLASTER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
107 PIPELAYER (WATER, SEWER AND GAS)	2009-12-07	24.31	12.88	37.19
	2010-05-01	25.16	13.63	38.79
108 TUNNEL MINER	2009-12-07	23.01	12.88	35.89
	2010-05-01	23.86	13.63	37.49
109 UNDERGROUND AND OPEN DITCH LABORER (EIGHT FEET BELOW STARTING GRADE LEVEL)	2009-12-07	18.95	7.65	26.60
110 SURVEY FIELD TECHNICIAN (OPERATE TOTAL STATION, GPS RECEIVER, LEVEL, ROD OR RANGE POLES, STEEL TAPE MEASUREMENT; MARK AND DRIVE STAKES; HAND OR POWER DIGGING FOR AND IDENTIFICATION OF MARKERS OR MONUMENTS; PERFORM AND CHECK CALCULATIONS; REVIEW AND UNDERSTAND CONSTRUCTION PLANS AND LAND SURVEY MATERIALS). THIS CLASSIFICATION DOES NOT APPLY TO THE WORK PERFORMED ON A PREVAILING WAGE PROJECT BY A LAND SURVEYOR WHO IS LICENSED PURSUANT TO MINNESOTA STATUTES, SECTIONS 326.02 TO 326.15.	2009-12-07	26.25	11.69	37.94
111 TRAFFIC CONTROL PERSON (TEMPORARY SIGNAGE)	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
112 QUALITY CONTROL TESTER (FIELD AND COVERED OFF-SITE FACILITIES; TESTING OF AGGREGATE, ASPHALT, AND CONCRETE MATERIALS); LIMITED TO MN DOT HIGHWAY AND HEAVY CONSTRUCTION PROJECTS WHERE THE MN DOT HAS RETAINED QUALITY ASSURANCE PROFESSIONALS TO REVIEW AND INTERPRET THE RESULTS OF QUALITY CONTROL TESTERS. SERVICES PROVIDED BY THE CONTRACTOR.	2009-12-07	17.49	4.18	21.67
201 ARTICULATED HAULER	2009-12-07	27.36	15.25	42.61
	2010-05-01	29.11	15.85	44.96
202 BOOM TRUCK	2009-12-07	27.36	15.25	42.61
	2010-05-01	28.36	15.85	44.21
203 LANDSCAPING EQUIPMENT, INCLUDES HYDRO SEEDER OR MULCHER, SOD ROLLER, FARM TRACTOR WITH ATTACHMENT SPECIFICALLY SEEDING, SODDING, OR PLANT, AND TWO-FRAMED FORKLIFT (EXCLUDING FRONT, POSIT-TRACK, AND SKID STEER LOADERS), NO EARTHWORK OR GRADING FOR ELEVATIONS	2009-12-07	14.00	0.00	14.00
204 OFF-ROAD TRUCK	2009-12-07	27.36	15.25	42.61
GROUP 2	2009-12-07	28.11	15.25	43.36
	2010-05-01	29.11	15.85	44.96
302 HELICOPTER PILOT (HIGHWAY AND HEAVY ONLY)				
303 CONCRETE PUMP (HIGHWAY AND HEAVY ONLY)				
304 ALL CRANES WITH OVER 135-FOOT BOOM, EXCLUDING JIB (HIGHWAY AND HEAVY ONLY)				

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
305 DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR OTHER SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS THREE CUBIC YARDS AND OVER MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)				
306 GRADER OR MOTOR PATROL (HIGHWAY AND HEAVY ONLY)				
307 PILE DRIVING (HIGHWAY AND HEAVY ONLY)				
308 TUGBOAT 100 H.P. AND OVER WHEN LICENSE REQUIRED (HIGHWAY AND HEAVY ONLY)				
GROUP 3	2009-12-07	27.66	15.25	42.91
	2010-05-01	28.66	15.85	44.51
309 ASPHALT BITUMINOUS STABILIZER PLANT (HIGHWAY AND HEAVY ONLY)				
310 CABLEWAY (HIGHWAY AND HEAVY ONLY)				
311 CONCRETE MIXER, STATIONARY PLANT (HIGHWAY AND HEAVY ONLY)				
312 DERRICK (GUY OR STIFFLEG)(POWER)(SKIDS OR STATIONARY) (HIGHWAY AND HEAVY ONLY)				
313 DRAGLINE, CRAWLER, HYDRAULIC BACKHOE (TRACK OR WHEEL MOUNTED) AND/OR SIMILAR EQUIPMENT WITH SHOVEL-TYPE CONTROLS, UP TO THREE CUBIC YARDS MANUFACTURER.S RATED CAPACITY INCLUDING ALL ATTACHMENTS (HIGHWAY AND HEAVY ONLY)				
314 DREDGE OR ENGINEERS, DREDGE (POWER) AND ENGINEER (HIGHWAY AND HEAVY ONLY)				
315 FRONT END LOADER, FIVE CUBIC YARDS AND OVER INCLUDING ATTACHMENTS. (HIGHWAY AND HEAVY ONLY)				
316 LOCOMOTIVE CRANE OPERATOR (HIGHWAY AND HEAVY ONLY)				
317 MIXER (PAVING) CONCRETE PAVING, ROAD MOLE, INCLUDING MUCKING OPERATIONS, CONWAY OR SIMILAR TYPE (HIGHWAY AND HEAVY ONLY)				
318 MECHANIC . WELDER ON POWER EQUIPMENT (HIGHWAY AND HEAVY ONLY)				
319 TRACTOR . BOOM TYPE (HIGHWAY AND HEAVY ONLY)				
320 TANDEM SCRAPER (HIGHWAY AND HEAVY ONLY)				
321 TRUCK CRANE . CRAWLER CRANE (HIGHWAY AND HEAVY ONLY)				
322 TUGBOAT 100 H.P AND OVER (HIGHWAY AND HEAVY ONLY)				
GROUP 4	2009-12-07	27.36	15.25	42.61
	2010-05-01	28.36	15.85	44.21
323 AIR TRACK ROCK DRILL (HIGHWAY AND HEAVY ONLY)				
324 AUTOMATIC ROAD MACHINE (CMI OR SIMILAR) (HIGHWAY AND HEAVY ONLY)				
325 BACKFILLER OPERATOR (HIGHWAY AND HEAVY ONLY)				
326 CONCRETE BATCH PLANT OPERATOR (HIGHWAY AND HEAVY ONLY)				
327 BITUMINOUS ROLLERS, RUBBER TIRED OR STEEL DRUMMED (EIGHT TONS AND OVER) (HIGHWAY AND HEAVY ONLY)				
328 BITUMINOUS SPREADER AND FINISHING MACHINES (POWER), INCLUDING PAVERS, MACRO SURFACING AND MICRO SURFACING, OR SIMILAR TYPES (OPERATOR AND SCREED PERSON) (HIGHWAY AND HEAVY ONLY)				
329 BROKK OR R.T.C. REMOTE CONTROL OR SIMILAR TYPE WITH ALL ATTACHMENTS (HIGHWAY AND HEAVY ONLY)				
330 CAT CHALLENGER TRACTORS OR SIMILAR TYPES PULLING ROCK WAGONS, BULLDOZERS AND SCRAPERS (HIGHWAY AND HEAVY ONLY)				
331 CHIP HARVESTER AND TREE CUTTER (HIGHWAY AND HEAVY ONLY)				
332 CONCRETE DISTRIBUTOR AND SPREADER FINISHING MACHINE, LONGITUDINAL FLOAT, JOINT MACHINE, AND SPRAY MACHINE (HIGHWAY AND HEAVY ONLY)				
333 CONCRETE MIXER ON JOBSITE (HIGHWAY AND HEAVY ONLY)				
334 CONCRETE MOBIL (HIGHWAY AND HEAVY ONLY)				
335 CRUSHING PLANT (GRAVEL AND STONE) OR GRAVEL WASHING, CRUSHING AND SCREENING PLANT (HIGHWAY AND HEAVY ONLY)				
336 CURB MACHINE (HIGHWAY AND HEAVY ONLY)				
337 DIRECTIONAL BORING MACHINE (HIGHWAY AND HEAVY ONLY)				
338 DOPE MACHINE (PIPELINE) (HIGHWAY AND HEAVY ONLY)				
339 DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL (HIGHWAY AND HEAVY ONLY)				
340 DUAL TRACTOR (HIGHWAY AND HEAVY ONLY)				
341 ELEVATING GRADER (HIGHWAY AND HEAVY ONLY)				
342 FORK LIFT OR STRADDLE CARRIER (HIGHWAY AND HEAVY ONLY)				
343 FORK LIFT OR LUMBER STACKER (HIGHWAY AND HEAVY ONLY)				

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
344 FRONT END, SKID STEER OVER 1 TO 5 C YD				
345 GPS REMOTE OPERATING OF EQUIPMENT (HIGHWAY AND HEAVY ONLY)				
346 HOIST ENGINEER (POWER) (HIGHWAY AND HEAVY ONLY)				
347 HYDRAULIC TREE PLANTER (HIGHWAY AND HEAVY ONLY)				
348 LAUNCHER PERSON (TANKER PERSON OR PILOT LICENSE) (HIGHWAY AND HEAVY ONLY)				
349 LOCOMOTIVE (HIGHWAY AND HEAVY ONLY)				
350 MILLING, GRINDING, PLANNING, FINE GRADE, OR TRIMMER MACHINE (HIGHWAY AND HEAVY ONLY)				
351 MULTIPLE MACHINES, SUCH AS AIR COMPRESSORS, WELDING MACHINES, GENERATORS, PUMPS (HIGHWAY AND HEAVY ONLY)				
352 PAVEMENT BREAKER OR TAMPING MACHINE (POWER DRIVEN) MIGHTY MITE OR SIMILAR TYPE (HIGHWAY AND HEAVY ONLY)				
353 PICKUP SWEEPER, ONE CUBIC YARD AND OVER HOPPER CAPACITY(HIGHWAY AND HEAVY ONLY)				
354 PIPELINE WRAPPING, CLEANING OR BENDING MACHINE (HIGHWAY AND HEAVY ONLY)				
355 POWER PLANT ENGINEER, 100 KWH AND OVER (HIGHWAY AND HEAVY ONLY)				
356 POWER ACTUATED HORIZONTAL BORING MACHINE, OVER SIX INCHES (HIGHWAY AND HEAVY ONLY)				
357 PUGMILL (HIGHWAY AND HEAVY ONLY)				
358 PUMPCRETE (HIGHWAY AND HEAVY ONLY)				
359 RUBBER-TIRED FARM TRACTOR WITH BACKHOE INCLUDING ATTACHMENTS (HIGHWAY AND HEAVY ONLY)				
360 SCRAPER (HIGHWAY AND HEAVY ONLY)				
361 SELF-PROPELLED SOIL STABILIZER (HIGHWAY AND HEAVY ONLY)				
362 SLIP FORM (POWER DRIVEN) (PAVING) (HIGHWAY AND HEAVY ONLY)				
363 TIE TAMPER AND BALLAST MACHINE (HIGHWAY AND HEAVY ONLY)				
364 TRACTOR, BULLDOZER (HIGHWAY AND HEAVY ONLY)				
365 TRACTOR, WHEEL TYPE, OVER 50 H.P. WITH PTO UNRELATED TO LANDSCAPING (HIGHWAY AND HEAVY ONLY)				
366 TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER (HIGHWAY AND HEAVY ONLY)				
367 TUB GRINDER, MORBARK, OR SIMILAR TYPE (HIGHWAY AND HEAVY ONLY)				
368 WELL POINT DISMANTLING OR INSTALLATION (HIGHWAY AND HEAVY ONLY)				
GROUP 5	2009-12-07	24.79	15.25	40.04
	2010-05-01	25.79	15.85	41.64
369 AIR COMPRESSOR, 600 CFM OR OVER (HIGHWAY AND HEAVY ONLY)				
370 BITUMINOUS ROLLER (UNDER EIGHT TONS) (HIGHWAY AND HEAVY ONLY)				
371 CONCRETE SAW (MULTIPLE BLADE) (POWER OPERATED) (HIGHWAY AND HEAVY ONLY)				
372 FORM TRENCH DIGGER (POWER) (HIGHWAY AND HEAVY ONLY)				
373 FRONT END, SKID STEER UP TO 1C YD				
374 GUNITE GUNALL (HIGHWAY AND HEAVY ONLY)				
375 HYDRAULIC LOG SPLITTER (HIGHWAY AND HEAVY ONLY)				
376 LOADER (BARBER GREENE OR SIMILAR TYPE) (HIGHWAY AND HEAVY ONLY)				
377 POST HOLE DRIVING MACHINE/POST HOLE AUGER (HIGHWAY AND HEAVY ONLY)				
378 POWER ACTUATED AUGER AND BORING MACHINE (HIGHWAY AND HEAVY ONLY)				
379 POWER ACTUATED JACK (HIGHWAY AND HEAVY ONLY)				
380 PUMP (HIGHWAY AND HEAVY ONLY)				
381 SELF-PROPELLED CHIP SPREADER (FLAHERTY OR SIMILAR) (HIGHWAY AND HEAVY ONLY)				
382 SHEEP FOOT COMPACTOR WITH BLADE . 200 H.P. AND OVER(HIGHWAY AND HEAVY ONLY)				
383 SHOULDERING MACHINE (POWER) APSCO OR SIMILAR TYPE INCLUDING SELF-PROPELLED SAND AND CHIP SPREADER (HIGHWAY AND HEAVY ONLY)				
384 STUMP CHIPPER AND TREE CHIPPER (HIGHWAY AND HEAVY ONLY)				
385 TREE FARMER (MACHINE) (HIGHWAY AND HEAVY ONLY)				
GROUP 6	2009-12-07	23.92	15.25	39.17
	2010-05-01	24.92	15.85	40.77
387 CAT, CHALLENGER, OR SIMILAR TYPE OF TRACTORS, WHEN PULLING DISK OR ROLLER (HIGHWAY AND HEAVY ONLY)				

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE

388 CONVEYOR (HIGHWAY AND HEAVY ONLY)

389 DREDGE DECK HAND (HIGHWAY AND HEAVY ONLY)

390 FIRE PERSON OR TANK CAR HEATER (HIGHWAY AND HEAVY ONLY)

391 GRAVEL SCREENING PLANT (PORTABLE NOT CRUSHING OR WASHING) (HIGHWAY AND HEAVY ONLY)

392 GREASER (TRACTOR) (HIGHWAY AND HEAVY ONLY)

393 LEVER PERSON (HIGHWAY AND HEAVY ONLY)

394 OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS, AND MILLING MACHINES, OR OTHER SIMILAR HEAVY EQUIPMENT) (HIGHWAY AND HEAVY ONLY)

395 POWER SWEEPER (HIGHWAY AND HEAVY ONLY)

396 SHEEP FOOT ROLLER AND ROLLERS ON GRAVEL COMPACTION, INCLUDING VIBRATING ROLLERS (HIGHWAY AND HEAVY ONLY)

397 TRACTOR, WHEEL TYPE, OVER 50 H.P., UNRELATED TO LANDSCAPING

GROUP 1 FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US

501 HELICOPTER PILOT (COMMERCIAL CONSTRUCTION ONLY)

502 TOWER CRANE 250 FEET AND OVER (COMMERCIAL CONSTRUCTION ONLY)

503 TRUCK CRAWLER CRANE WITH 200 FEET OF BOOM AND OVER, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)

GROUP 2 FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US

504 CONCRETE PUMP WITH 50 METERS/164 FEET OF BOOM AND OVER (COMMERCIAL CONSTRUCTION ONLY)

505 PILE DRIVING WHEN THREE DRUMS IN USE (COMMERCIAL CONSTRUCTION ONLY)

506 TOWER CRANE 200 FEET AND OVER (COMMERCIAL CONSTRUCTION ONLY)

507 TRUCK OR CRAWLER CRANE WITH 150 FEET OF BOOM UP TO AND NOT INCLUDING 200 FEET, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)

GROUP 3 FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US

508 ALL-TERRAIN VEHICLE CRANES (COMMERCIAL CONSTRUCTION ONLY)

509 CONCRETE PUMP 32-49 METERS/102-164 FEET (COMMERCIAL CONSTRUCTION ONLY)

510 DERRICK (GUY & STIFFLEG) (COMMERCIAL CONSTRUCTION ONLY)

511 STATIONARY TOWER CRANE 200 FEET AND OVER MEASURED FROM BOOM FOOT PIN (COMMERCIAL CONSTRUCTION ONLY)

512 SELF-ERECTING TOWER CRANE 100 FEET AND OVER MEASURED FROM BOOM FOOT PIN (COMMERCIAL CONSTRUCTION ONLY)

513 TRAVELING TOWER CRANE (COMMERCIAL CONSTRUCTION ONLY)

514 TRUCK OR CRAWLER CRANE UP TO AND NOT INCLUDING 150 FEET OF BOOM, INCLUDING JIB (COMMERCIAL CONSTRUCTION ONLY)

GROUP 4 FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US

515 CRAWLER BACKHOE INCLUDING ATTACHMENTS (COMMERCIAL CONSTRUCTION ONLY)

516 FIREPERSON, CHIEF BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)

517 HOIST ENGINEER (THREE DRUMS OR MORE) (COMMERCIAL CONSTRUCTION ONLY)

518 LOCOMOTIVE (COMMERCIAL CONSTRUCTION ONLY)

519 OVERHEAD CRANE (INSIDE BUILDING PERIMETER) (COMMERCIAL CONSTRUCTION ONLY)

520 TRACTOR . BOOM TYPE (COMMERCIAL CONSTRUCTION ONLY)

GROUP 5 FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US

521 AIR COMPRESSOR 450 CFM OR OVER (TWO OR MORE MACHINES) (COMMERCIAL CONSTRUCTION ONLY)

522 CONCRETE MIXER (COMMERCIAL CONSTRUCTION ONLY)

523 CONCRETE PUMP UP TO 31 METERS/101 FEET OF BOOM

524 DRILL RIGS, HEAVY ROTARY OR CHURN OR CABLE DRILL WHEN USED FOR CAISSON FOR ELEVATOR OR BUILDING CONSTRUCTION (COMMERCIAL CONSTRUCTION ONLY)

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
525 FORKLIFT (COMMERCIAL CONSTRUCTION ONLY)				
526 FRONT END, SKID STEER 1 TO 5 C YD				
527 HOIST ENGINEER (ONE OR TWO DRUMS) (COMMERCIAL CONSTRUCTION ONLY)				
528 MECHANIC-WELDER (ON POWER EQUIPMENT) (COMMERCIAL CONSTRUCTION ONLY)				
529 POWER PLANT (100 KW AND OVER OR MULTIPLES EQUAL TO 100KW AND OVER) (COMMERCIAL CONSTRUCTION ONLY)				
530 PUMP OPERATOR AND/OR CONVEYOR (TWO OR MORE MACHINES) (COMMERCIAL CONSTRUCTION ONLY)				
531 SELF-ERECTING TOWER CRANE UNDER 100 FEET MEASURED FROM BOOM FOOT PIN (COMMERCIAL CONSTRUCTION ONLY)				
532 STRADDLE CARRIER (COMMERCIAL CONSTRUCTION ONLY)				
533 TRACTOR OVER D2 (COMMERCIAL CONSTRUCTION ONLY)				
534 WELL POINT PUMP (COMMERCIAL CONSTRUCTION ONLY)				
GROUP 6	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
535 CONCRETE BATCH PLANT (COMMERCIAL CONSTRUCTION ONLY)				
536 FIREPERSON, FIRST CLASS BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)				
537 FRONT END, SKID STEER UP TO 1 C YD				
538 GUNITE MACHINE (COMMERCIAL CONSTRUCTION ONLY)				
539 TRACTOR OPERATOR D2 OR SIMILAR SIZE (COMMERCIAL CONSTRUCTION ONLY)				
540 TRENCHING MACHINE (SEWER, WATER, GAS) EXCLUDES WALK BEHIND TRENCHER				
GROUP 7	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
541 AIR COMPRESSOR 600 CFM OR OVER (COMMERCIAL CONSTRUCTION ONLY)				
542 BRAKEPERSON (COMMERCIAL CONSTRUCTION ONLY)				
543 CONCRETE PUMP/PUMPCRETE OR COMPLACO TYPE (COMMERCIAL CONSTRUCTION ONLY)				
544 FIREPERSON, TEMPORARY HEAT SECOND CLASS BOILER LICENSE (COMMERCIAL CONSTRUCTION ONLY)				
545 OILER (POWER SHOVEL, CRANE, TRUCK CRANE, DRAGLINE, CRUSHERS AND MILLING MACHINES, OR OTHER SIMILAR POWER EQUIPMENT) (COMMERCIAL CONSTRUCTION ONLY)				
546 PICK UP SWEEPER (ONE CUBIC YARD HOPPER CAPACITY) (COMMERCIAL CONSTRUCTION ONLY)				
547 PUMP AND/OR CONVEYOR (COMMERCIAL CONSTRUCTION ONLY)				
GROUP 8	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
548 ELEVATOR OPERATOR (COMMERCIAL CONSTRUCTION ONLY)				
549 GREASER (COMMERCIAL CONSTRUCTION ONLY)				
550 MECHANICAL SPACE HEATER (TEMPORARY HEAT NO BOILER LICENSE REQUIRED) (COMMERCIAL CONSTRUCTION ONLY)				
GROUP 1	2009-12-07	20.07	12.00	32.07
	2010-05-01	20.67	12.75	33.42
601 MECHANIC . WELDER				
602 TRACTOR TRAILER DRIVER				
603 TRUCK DRIVER (HAULING MACHINERY INCLUDING OPERATION OF HAND AND POWER OPERATED WINCHES)				
GROUP 2	2009-12-07	19.56	12.00	31.56
	2010-05-01	20.16	12.75	32.91
604 FOUR OR MORE AXLE UNIT, STRAIGHT BODY TRUCK				
GROUP 3	2009-12-07	19.41	12.00	31.41
	2010-05-01	20.01	12.75	32.76
605 BITUMINOUS DISTRIBUTOR DRIVER				
606 BITUMINOUS DISTRIBUTOR (ONE PERSON OPERATION)				
607 THREE AXLE UNITS				

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
GROUP 4	2009-12-07	19.41	12.00	31.41
	2010-05-01	20.01	12.75	32.76
608 BITUMINOUS DISTRIBUTOR SPRAY OPERATOR (REAR AND OILER)				
609 DUMP PERSON				
610 GREASER				
611 PILOT CAR DRIVER				
612 RUBBER-TIRED, SELF-PROPELLED PACKER UNDER 8 TONS				
613 TWO AXLE UNIT				
614 SLURRY OPERATOR				
615 TANK TRUCK HELPER (GAS, OIL, ROAD OIL, AND WATER)				
616 TRACTOR OPERATOR, UNDER 50 H.P.				
701 HEATING AND FROST INSULATORS	2009-12-07	19.50	0.00	19.50
702 BOILERMAKERS	2009-12-07	34.79	18.07	52.86
703 BRICKLAYERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
704 CARPENTERS	2009-12-07	24.48	17.14	41.62
	2010-05-01	25.98	17.14	43.12
705 CARPET LAYERS (LINOLEUM)	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
706 CEMENT MASONS	2009-12-07	34.50	7.65	42.15
707 ELECTRICIANS	2009-12-07	31.08	14.99	46.07
708 ELEVATOR CONSTRUCTORS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
709 GLAZIERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
710 LATHERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
711 GROUND PERSON	2009-12-07	23.33	14.83	38.16
712 IRONWORKERS	2009-12-07	33.80	20.37	54.17
713 LINEMAN	2009-12-07	34.82	14.82	49.64
714 MILLWRIGHT	2009-12-07	30.75	19.47	50.22
715 PAINTERS (INCLUDING HAND BRUSHED, HAND SPRAYED, AND THE TAPING OF PAVEMENT MARKINGS)	2009-12-07	29.70	14.06	43.76
716 PILEDRIVER (INCLUDING VIBRATORY DRIVER OR EXTRACTOR FOR PILING AND SHEETING OPERATIONS)	2009-12-07	24.48	17.14	41.62
	2010-05-01	25.98	17.14	43.12

LABOR CODE AND CLASS	EFFECT DATE	BASIC RATE	FRINGE RATE	TOTAL RATE
717 PIPEFITTERS . STEAMFITTERS	2009-12-07	34.06	13.30	47.36
718 PLASTERERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
719 PLUMBERS	2009-12-07	27.60	22.43	50.03
720 ROOFER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
721 SHEET METAL WORKERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
722 SPRINKLER FITTERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
723 TERRAZZO WORKERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
724 TILE SETTERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
725 TILE FINISHERS	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
726 DRYWALL TAPER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
727 WIRING SYSTEM TECHNICIAN	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
728 WIRING SYSTEMS INSTALLER	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			
729 ASBESTOS ABATEMENT WORKER	2009-12-07	27.31	12.91	40.22
	2010-01-01	27.63	14.19	41.82
730 SIGN ERECTOR	FOR RATE CALL 651-284-5091 OR EMAIL DLI.PREVWAGE@STATE.MN.US			

DEPARTMENT OF LABOR AND INDUSTRY **May 10, 2010**

LABOR STANDARDS UNIT

NOTICE OF CERTIFICATION OF TRUCK RENTAL RATES AND EFFECTIVE DATE PURSUANT TO *MINNESOTA RULES,* PART 5200.1105

On May 10, 2010 the commissioner certified the minimum truck rental rates for highway projects in the state's ten highway and heavy construction areas for trucks and drivers operating "operating "five or more axle units, straight body trucks," "four axle units, straight body trucks," "three axle units," "tractor only," and "tractor trailers." The certification by the commissioner came after Notice of Determination of Truck Rental Rates by the commissioner, including the determination of truck operating costs, was published in the *State Register* on March 22, 2010 and the informal conference pursuant to *Minnesota Rules*, Part 5200.1105 to receive further public input prior to certification was held at the department on April 12, 2010.

The operating costs were determined by survey on a statewide basis. The operating cost for five or more axle units, straight body trucks" is determined to be $44.46 per hour. The operating cost for "four axle units, straight body trucks" is determined to be $36.81 per hour. The operating cost for "three axle units" is determined to be $37.35 per hour. The operating cost for "tractor only" is determined to be $41.58 per hour. The operating cost for "trailer only" is determined to be $11.46 per hour. The operating cost for "tractor trailers" is determined to be $53.04 per hour.

Adding the prevailing wage for drivers of these five types of trucks from each of the State's ten highway and heavy construction areas to the operating costs, the minimum hourly truck rental rate for the five types of trucks in each area is determined to be as follows:

	Tractor Trailer	Five or more axle	Four axle	Three Axle	Tractor only
Region 1	92.79	83.66	76.01	76.45	81.33
Region 2	86.46	77.37	69.72	63.30	75.00
Region 3	75.41	67.58	59.93	61.14	63.95
Region 4	74.47	65.36	57.71	70.11*	63.01
Region 5	89.99	68.31	60.66	64.08	78.53
Region 6	90.99	81.86	74.21	74.65	79.53
Region 7	86.46	77.37	69.72	70.11*	75.00
Region 8	79.42	65.21	57.56	50.82	67.96
Region 9	93.19	84.06	76.41	76.85	81.73
Region 10	86.46	77.37	69.72	50.12	75.00

*Correction to prevailing wage labor rate in Regions 4 & 7 effective May 10, 2010 from $33.01 to $32.76.

The operating costs, including the average truck broker fee paid by those survey respondents who reported paying truck broker fees, and the truck rental rates may also be reviewed by accessing the department's web site at www.dli.mn.gov. Questions regarding the operational costs and truck rental rates can be answered by calling (651)284-5091.

The minimum truck rental rates certified for these five types of trucks in the state's ten highway and heavy construction areas will be effective for all highway and heavy construction projects financed in whole or part with state funds advertised for bid on or after May 10, 2010.

STEVE SVIGGUM
COMMISSIONER

SPECIAL PROVISIONS
DIVISION A
SPECIAL REQUIREMENTS

INTENT OF CONTRACT

This Contract consists of grading, aggregate base, bituminous paving, and drainage on the following:

County Road 152 - SAP 07-598-26

The construction schedule is intended to allow the Contractor to perform bridge demolition and begin bridge construction during the winter season of 2010/2011 and be able to set the bridge beams prior to spring 2011 weight restrictions being placed.

GOVERNING SPECIFICATIONS

The State of Minnesota, Department of Transportation "Standard Specifications for Construction" 2005 EDITION shall apply in this contract, except as modified or altered in the following Special Provisions.

SPECIAL PROVISIONS
DIVISION S
SPECIAL REQUIREMENTS

(1208) PROPOSAL GUARANTY

No proposal will be considered unless it is accompanied by a guaranty complying with the requirements of Specification 1208 and providing a penal sum at least equal to 5 percent of the total amount of the bid (under all circumstances and without exception) as provided in Specification 1208.

WORK BY OTHERS

Traffic control devices for control of traffic will be provided at both ends of County Road 152 at the intersections of MNTH 30 and CSAH 29, these traffic control devices shall be installed and maintained by Blue Earth County at no cost to the Contractor. The Contractor shall provide and install barricades, fencing, and any other needed traffic control around his work site and equipment.

PERMITS

Blue Earth County has applied for an Army Corps of Engineers Permit to place fill in wetland areas. The Permit is expected to be received prior to bid opening. Until that time no fill may be placed in wetlands until the permit is received.

(1305) REQUIREMENT OF CONTRACT BOND

The provisions of Mn/DOT 1305 are hereby deleted and replaced with the following:

The successful bidder shall furnish a payment bond equal to the contract amount and a performance bond equal to the contract amount as required by Minnesota Statutes, section 574.26. The surety and form of the bonds shall be subject to the approval of the contracting authority.

The contracting authority shall require for all contracts less than or equal to five million dollars

($5,000,000.00), that the aggregate liability of the payment and performance bonds shall be twice the amount of the contract. All contracts in excess of five million dollars ($5,000,000.00) shall have an aggregate liability equal to the amount of the contract.

(1404) MAINTENANCE OF TRAFFIC

Traffic shall be maintained in accordance with the requirements of 1404 except as modified below:

All traffic control devices shall conform and be installed in accordance to the "Minnesota Manual on Uniform Traffic Control Devices" (MN MUTCD) and Part 6, "Field Manual for Temporary Traffic Control Zone Layouts", the "Guide to Establishing Speed Limits in Highway Work Zones", the Minnesota Flagging Handbook, the provisions of Mn/DOT 1404 and 1710, the Minnesota Standard Signs Manual, the Traffic Engineering Manual, the Traffic Control Layouts/Typical Traffic Control Layouts in the Plans, and these Special Provisions.

Traffic control devices include, but are not limited to, barricades, warning signs, trailers, flashers, cones, drums, pavement markings and flaggers as required and sufficient barricade weights to maintain barricade stability.

Prior to the start of any grading construction operations, the Contractor shall submit in writing to the Engineer his proposed method of traffic control for any operation that necessitates lane closure or traffic control signing and his proposed method of keeping the road open to local traffic during times of inclement weather and soft roadbed surface.

All traffic control required under this Contract shall be performed as incidental work for which no direct payment will be made.

The parking of Contractors vehicles within the limit of the roadway shoulders, will not be permitted except as approved by the Engineer.

The parking of Contractors vehicles that obstruct any traffic control devices will not be permitted.

The Contractor shall have at least two (2) extra Type 1 barricades stored at a convenient site for use in an emergency.

(1507) UTILITY PROPERTY AND SERVICE

Construction operations in the proximity of utility properties shall be performed in accordance with the provisions of Mn/DOT 1507, except as modified below:

All utilities that relate to this Project are classified as "Level D," unless the Plans specifically state otherwise. This utility quality level was determined according to the guidelines of CI/ASCE 38-02, entitled "Standard Guidelines for the Collection and depiction of existing subsurface utility data."

The following utility owners have existing facilities that may be affected by the work under this Contract, all of which they intend where necessary to relocate or adjust in advance of or concurrently with the Contractor's operations.

Benco Electric	Hickory Tech
Rick Alfred	Mike Holmin
PO Box 8	221 E. Hickory St., PO Box 3288
Mankato, MN 56002	Mankato, MN 56002-3288
507-387-7963	507-387-1843
ricka@benco.org	Mike.holmin@hickorytech.com

See http://www.dot.state.mn.us/utility for utility operators contact list.

The State's Contractor shall coordinate his/her work and cooperate with the foregoing utility owners and their forces in a manner consistent with the provisions of Mn/DOT 1507 and the applicable provisions of Mn/DOT 1505.

(1508) CONSTRUCTION STAKES, LINES, AND GRADES

Section 1508 is hereby supplemented to include the following:

The Contractor shall give the Engineer 48-hour notice of request for construction stakes.

(1513) RESTRICTIONS ON MOVEMENT AND STORAGE OF HEAVY LOADS AND EQUIPMENT

The provisions of Mn/DOT 1513 are hereby deleted and replaced with the following:

The hauling or storage of materials and/or the movement and storage of equipment to and from the Project and over completed structures, base courses, and pavements within the Project that are open for use by traffic and are to remain a part of the permanent improvement, shall comply with the regulations governing the operation of vehicles on the highways of Minnesota, as prescribed in the Highway Traffic Regulation Act.

The Contractor shall comply with legal load restrictions, and with any special restrictions imposed by the Contract, in hauling or storing materials, moving or storing equipment on structures, completed subgrades, base courses, and pavements within the Project that are under construction, or have been completed but have not been accepted and opened for use by traffic.

The Contractor shall have a completed Weight Information Card in each vehicle used for hauling bituminous mixture, aggregate, batch concrete, and grading material (including borrow and excess) prior to starting work. This card shall identify the truck or tractor and trailer by Minnesota or prorated license number and shall contain the tare, maximum allowable legal gross mass, supporting information, and the signature of the owner. The card shall be available to the Engineer upon request. All Contractor-related costs in providing, verifying, and spot checking the cab card information (including weighing trucks on certified commercial scales, both empty and loaded) will be incidental, and no compensation other than for Plan pay items will be made.

Equipment mounted on crawler tracks or steel-tired wheels shall not be operated on or across concrete or bituminous surfaces without specific authorization from the Engineer. Special restrictions may be imposed by the Contract with respect to speed, load distribution, surface protection, and other precautions considered necessary.

Should construction operations necessitate the crossing of an existing pavement, bridges or completed portions of the pavement structure with equipment or loads that would otherwise be prohibited, approved methods of load distribution or bridging shall be provided by the Contractor at no expense to the Department.

Neither by issuance of a special permit, nor by adherence to any other restrictions imposed, shall the Contractor be relieved of liability for damages resulting from the operation and movement of construction equipment.

Unless specifically allowed in the Contract, or approved by the Engineer, all construction material and/or equipment which might be temporarily stored or parked on a bridge deck while the bridge is under construction will be limited by this specification. These requirements are intended to limit construction loads

to levels commensurate with the typical design live load. The storage of materials and equipment as a whole will be limited to all of the following:

- Stockpiles of material are limited to a maximum weight of 31,702 kg/100 m2 (**65,000 lbs./1000 ft2**).
- Individual material stockpiles (including but not limited to pallets of products, reinforcing bar bundles, aggregate piles) are limited to a maximum weight of 12,200 kg/10 m2 (**25,000 lbs./100 ft2**).
- Combinations of vehicles, materials, and other equipment are limited to a maximum weight of 90,700 kg (**200,000 lbs.**) per span providing span lengths are over 40 feet long.

The Contractor may submit alternate loadings to the Project Engineer 30 Calendar days prior to placement. Any submittals will require the calculations be certified by a Professional Engineer.

(1701) LAWS TO BE OBSERVED (DATA PRACTICES)

The provisions of Mn/DOT 1701 are supplemented with the following:

Bidders are advised that all data created, collected, received, maintained, or disseminated by the Contractor and any subcontractors in performing the work contained in this Contract are subject to the requirements of MN Statute Chapter 13, the Minnesota Government Data Practices Act (MGDPA). The Contractor shall comply with the requirements of the MGDPA in the same manner as the Department. The Contractor does not have a duty to provide access to public data to the public if the public data are available from the Department, except as required by the terms of the Contract.

(1701) LAWS TO BE OBSERVED (BRIDGE)

The provisions of Mn/DOT 1701 are modified and/or supplemented with the following:

The Contractor shall use Mn/DOT approved companies for testing, waste transport and disposal as provided and described in Mn/DOT's manual "Asbestos and Regulated Waste Manual For Structure Demolition Or Relocations for Construction Projects" available on the following website: http://www.dot.state.mn.us/environment/regulated-materials/index.html. Contact Mark Vogel, Office of Environmental Services, 651.366.3630 with any questions regarding the manual.

The Contractor shall only use Mn/DOT approved contractors for: building/bridge assessments, asbestos abatement and regulated waste oversight, asbestos removal, regulated waste removal, and regulated waste disposal and recycling (for a list of Mn/DOT Approved Contractors call 651.366.3630).

The Contractor shall use only MPCA permitted Combined Solid Waste Disposal Facilities to dispose of all solid waste including demolition debris. Demolition debris shall not be disposed of in a permit-by-rule landfill.

The successful bidding Contractor shall:

(A) Comply with the Environmental Protection Agency (EPA) Regulations, 40 CFR pt. 61, subd.M - NATIONAL EMISSION STANDARD FOR ASBESTOS.

(B) Provide the Minnesota Pollution Control Agency (MPCA) and The Mn/DOT Project Engineer written notice of intention to demolish or move a structure - see form "Notification of Intent to Perform a Bridge Demolition for Mn/DOT Operations" at http://www.dot.state.mn.us/environment/reg_mat/bldg_demo.html. Such notice shall be provided to the MPCA and the Mn/DOT Project Engineer a minimum of 10 working days before any move or demolition.

(C) And if the bridge contains any asbestos, the Contractor shall:

(1) Use a Minnesota Department of Health (MDH) certified oversight contractor to oversee the MDH certified asbestos abatement contractor.
(2) Depending on the amounts and types of asbestos on the premises Submit "Notification of Asbestos Related Work", to the Minnesota Pollution Control Agency and the Mn. Department of Health 10 working days prior to commencement of abatement activities. The Contractor shall submit a copy of the completed notification/s to The Mn/DOT Project Engineer at the same time.
(3) Submit all required documentation to the Minnesota Pollution Control Agency and the Mn Department of Health to the respective regulatory agencies and copy the Mn/DOT Project Engineer on all submittals. Information on the requirements of MPCA can be found at: http://www.pca.state.mn.us/programs/asbestos_p.html. Information on the requirements of the Department of Health can be found at: http://www.health.state.mn.us/divs/eh/asbestos/index.html.
(4) Transport all asbestos containing waste in compliance with USDOT packaging and transportation requirements. The Contractor shall provide The Mn/DOT Project Engineer with all Asbestos Containing Material Transportation shipping papers/manifests. Shipping paper guidance can be found at http://www.dot.state.mn.us/environment/regulated-materials/regmat-trans-disposal.html.
(5) Dispose of all asbestos containing waste in a Minnesota Pollution Control Agency permitted mixed municipal solid waste or Industrial landfill (not demolition debris landfills) permitted to accept asbestos containing wastes. Provide The Mn/DOT Project Engineer all landfill disposal receipts.

(D) Comply with Mn/DOT's manual "Asbestos and Regulated Waste Manual For Structure Demolition Or Relocations for Construction Projects" available on the following website: http://www.dot.state.mn.us/environment/regulated-materials/index.html.

The successful Contractor shall comply with all Mn/DOT policy, laws, regulations and/or rules regarding the removal and recycling/disposal of any regulated wastes including, but not limited to: *see manual for procedures and approved contractors/end sites.*

1. Treated Wood
2. Lead Paint
3. Lead Plates
4. Polychloronatedbiphenols (PCB's)
5. Mercury

The transportation of all the above wastes shall be in compliance with USDOT packaging and transportation requirements. The Contractor shall provide The Mn/DOT Project Engineer with all shipping papers or manifests.

The Contractor shall provide the Mn/DOT Project Engineer with copies of disposal or recycling records.

FAILURE TO COMPLY WITH NOTIFICATION PROVISIONS WILL BE DEEMED A MATERIAL BREECH OF CONTRACT. IN THE EVENT THAT A REGULATORY AGENCY IMPOSES MONETARY SANCTIONS ON Mn/DOT THAT ARE BASED, IN WHOLE OR IN PART, UPON THE ACTS OR OMISSIONS OF THE CONTRACTOR, THE CONTRACTOR AGREES TO INDEMNIFY Mn/DOT AND TO HOLD Mn/DOT HARMLESS FOR SAME, EXCEPT TO THE EXTENT THAT ANY SANCTIONS WERE CAUSED BY Mn/DOT'S OWN NEGLIGENCE.

(1706) EMPLOYEE HEALTH AND WELFARE

The provisions of Mn/DOT 1706 are supplemented with the following:

All construction operations shall be conducted in compliance with applicable laws, regulations and

industry standards as described in Mn/DOT 1706. The Contractor shall be considered to be fully responsible for the development, implementation and enforcement of all safety requirements on the Project, notwithstanding any actions Mn/DOT may take to help ensure compliance with those requirements.

The Contractor shall submit a written safety program to the Engineer at the pre-construction conference addressing safety issues for all Project activities. This program shall contain name(s) of person(s) responsible for all safety requirements and this Contractor's Designee(s) shall be available at all times that work is being performed. The Contractor's designee(s) shall be responsible for correcting violations on the Project as observed by the Engineer or his/her representative.

The Contractor shall not use any motor vehicle equipment on this Project having an obstructed view to the rear unless:

(A) The vehicle has a reverse signal alarm which is audible above the surrounding noise level; or
(B) The vehicle is backed up only when an observer signals that it is safe to do so.

A $500.00 monetary deduction (per incident) will be assessed by Blue Earth County for violations of safety standards and requirements that have the potential for loss of life and/or limb of Project personnel or the public. The areas of special concern include, but are not limited to excavation stability protection, fall protection, protection from overhead hazards, vehicle backup protection (see above), confined space safety, blasting operations, and personal safety devices.

None of the monetary deductions listed above shall be considered by the Contractor as allowance of noncompliance incidents of these safety requirements on this Project.

(1707) PUBLIC CONVENIENCE AND SAFETY

Section 1707 is hereby supplemented to include the following:

The Contractor shall remove, store and replace all mailboxes, etc., that may interfere with the installation of utilities and grading. The Contractor shall contact and receive permission from the property owner before removing or relocating any mailboxes. Such work shall be considered incidental to the contract with no direct compensation made therefore. Damage to mailboxes, etc., during removal, storage shall be corrected and/or repaired by the Contractor.

Mailboxes shall not be disturbed until actual construction warrants removal. No such removal shall take place until the Engineer is on-site, has approved of and is witness to the work. Removed mailboxes shall be relocated to a temporary location subject to the approval of the Engineer, the homeowner and the U.S. Postal Service. Removed mailboxes shall be relocated promptly so as to prevent any interruption in postal service.

(1710) TRAFFIC CONTROL DEVICES

All traffic control devices and methods shall conform to the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD), Minnesota Standard Signs Manual, the Traffic Engineering Manual, and the following:

On any roadway having a 45 mph or higher speed limit prior to construction, all Category I and II temporary traffic control devices used after July 1, 2006 shall meet NCHRP 350 crash testing criteria. This includes all new and used Category I and Category II devices. Category I devices include tube markers, plastic drums and cones, etc. Category II devices include portable sign supports, Type I ,II and III barricades, etc.

The Contractor is hereby advised that the MN MUTCD requires that all signs shall meet the NCHRP 350 crash testing criteria.

The Contractor shall provide the Project Engineer a Letter of Compliance stating that all of the Contractors

Category I and II Devices are NCHRP 350 approved as of July 1, 2006. The Letter of Compliance must also include approved drawings of the different signs and devices and shall be provided to the Project Engineer at the Pre-construction meeting.

(1712) PROTECTION & RESTORATION OF PROPERTY & LANDSCAPE

Protection and restoration of property and landscape shall be done in accordance with the requirements of 1712, except as modified below:

Any signs that interfere with construction and are adjusted or removed by authorization of the Engineer shall be reset in their original location, by the Contractor, prior to leaving the project each day. Said signs shall be set in a temporary location, in a manner approved by the Engineer, during construction hours. Permanent replacement of traffic control devices, upon completion of all work, shall be by the County.

(1717) AIR, LAND AND WATER POLLUTION

The provisions of Mn/DOT 1717 are supplemented and/or modified with the following:

DISCOVERY OF CONTAMINATED MATERIALS AND REGULATED WASTES

If during the course of the Project, the Contractor unexpectedly encounters any of the following conditions indicating the possible presence of contaminated soil, contaminated water, or regulated waste, the Contractor shall immediately stop work in the vicinity, notify the Engineer, and request suspension of work in the vicinity of the discovery area, in accordance with Mn/DOT 1803.4.

A documented inspection and evaluation will be conducted prior to the resumption of work. The Contractor shall not resume work in the suspected area without authorization by the Engineer.

(A) Indicators of contaminated soil, ground water or surface water include, but are not limited to the following:

(1) Odor including gasoline, diesel, creosote (odor of railroad ties), mothballs, or other chemical odor.
(2) Soil stained green or black (but not because of organic content), or with a dark, oily appearance, or any unusual soil color or texture.
(3) A rainbow color (sheen) on surface water or soil.

(B) Indicators of regulated wastes include, but are not limited to the following:

(1) Cans, bottles, glass, scrap metal, wood (indicators of solid waste and a possible dump)
(2) Concrete and asphalt rubble (indicators of demolition waste).
(3) Roofing materials, shingles, siding, vermiculite, floor tiles, transite or any fibrous material (indicators of demolition waste that could contain asbestos, lead or other chemicals).
(4) Culverts or other pipes with tar-like coating, insulation or transite (indicators of asbestos).
(5) Ash (ash from burning of regulated materials may contain lead, asbestos or other chemicals).
(6) Sandblast residue (could contain lead).
(7) Treated wood including, but not limited to products referred to as green treat, brown treat and creosote (treated wood disposal is regulated).
(8) Chemical containers such as storage tanks, drums, filters and other containers (possible sources of chemical contaminants).
(9) Old basements with intact floor tiles or insulation (could contain asbestos), sumps (could contain chemical waste), waste traps (could contain oily wastes) and cesspools (could contain chemical or oily wastes).

Mn/DOT 1717.2 A2 is hereby deleted and replaced with the following:

A2 During Construction

The Contractor shall implement the Project's Storm Water Pollution Prevention Plan. The Contractor shall schedule and install temporary and permanent sediment and erosion control measures, construct ponds and drainage facilities, finish earth work operations, place topsoil, establish turf, and conduct other Contract work in a timely manner to minimize erosion and sedimentation.

All exposed soil areas with continuous positive slopes that are within 60 m (**200 feet**) of a public water shall have temporary or permanent erosion protection within 24 hours after the construction activity in that portion of the site has temporarily or permanently ceased and connection is established to the public water. All other positive slopes to constructed surface waters, such as permanent storm water treatment ponds, curb and gutter systems, storm sewer inlets, temporary or permanent drainage ditches, or other storm water conveyance systems, shall have temporary erosion protection or permanent cover for the exposed soil areas as soon as practicable but no later than 14 days after construction activity has temporarily or permanently ceased in that area. For those drainage areas that have a discharge point within 1 mile and flows to an impaired or Special Waters shall have temporary erosion protection or permanent cover for the exposed soil areas as soon as practicable but no later than 7 days after construction activity has temporarily or permanently ceased in that area. Impaired and Special Waters are defined as those listed and referenced in the NPDES Permit.

Positive slopes adjacent to public waters and wetlands will be stabilized at the close of each day when weather forecasts for rain that evening, and/or overnight including weekends. Once work is completed it will be stabilized permanently as soon as practical but no later than seven days.

Exposed soil areas do not include; stockpiles or surcharge areas of sand, gravel, aggregate, concrete, bituminous, or road bed and surfacing material. A perimeter sediment barrier may be necessary to minimize loss when these are within the 60 m (**200 feet**) of existing surface waters or the property edge.

The bottom of temporary or permanent drainage ditches or swales constructed to drain water from a construction site must be stabilized with erosion control measures for the last 60 m (**200 feet),** or more when conditions warrant, from the property edge or from the point of discharge to any existing surface water. Stabilization shall be completed within 24 hours after the construction activity in that portion of the ditch has temporarily or permanently ceased. Ditch stabilization will continue concurrently with construction activities but no later than 14 days after construction activities have permanently or temporarily ceased. Any, culvert pipe or storm sewer pipe that is within the cumulative distance is not part of this distance. Ditch checks may be provided where necessary to slow water flow and capture sediment.

Temporary or permanent ditches used as treatment systems will not need to be stabilized but must provide the proper Best Management Practices for the treatment system.

Pipe outlets shall be provided with temporary or permanent energy dissipation within 24 hours of connecting the pipe to any constructed or existing surface waters.

The Contractor shall limit the surface area of erodible soil that can be exposed to possible erosion at any one time when the permanent erosion control features are not completed and operative.

All liquid and solid wastes generated by concrete washout operations must be contained and not have the opportunity to come in contact with the surface waters or ground water. This includes the ditches, slopes to ditches, curb and gutter/storm sewer systems, and ponds. Areas where there are sandy soils, karsts, and high ground water the washout facility must have an impermeable liner. Liquid and solid wastes must be disposed of properly. A concrete washout sign must be installed adjacent to each washout facility to notify personnel.

Mn/DOT 1717.2E is hereby deleted and replaced with the following:

E Site Plans
The Engineer may require the Contractor to submit a site plan, in writing, detailing proposed erosion control and sediment control measures and a schedule indicating starting and completion times for construction operations working in water bodies and/or in direct proximity to waters of the state.

Contractor shall not start work in the affected areas until the schedule and site plan have been accepted by the Engineer and all materials and equipment for the activity are on site.

(1717) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
Pollution of natural resources of air, land and water by operations under this Contract shall be prevented, controlled, and abated in accordance with the rules, regulations, and standards adopted and established by the Minnesota Pollution Control Agency (M.P.C.A.), and in accordance with the provisions of Mn/DOT 1717, these Special Provisions, and the following:

Minnesota Pollution Control Agency General Permit, Authorization to Discharge Storm Water

A. The Contractor shall furnish, install and maintain temporary and permanent erosion and sediment control devices in accordance with the provisions of 2105.5, 2573, 2575, as shown in the Plans, in accordance with the provisions of the Special Provisions Attachment "Minnesota Pollution Control Agency General Permit, Authorization to Discharge Storm Water", and the following:

The County of Blue Earth has applied for and received coverage under the above mentioned permit by signing both the Owner's and Contractor's certification blanks on the permit application. The County shall retain a photocopy of the original permit application. Upon award of the Contract, the County/City and the Contractor shall execute the Storm Water Permit Transfer/Modification Application form (attached to these Special Provisions) and submit it along with a photocopy of the original application to the Minnesota Pollution Control Agency. The Minnesota Pollution Control Agency, upon receipt of the Storm Water Permit Transfer Modification Application, will amend it to the original permit application thereby making both the County and the Contractor co-permittees for the requirements of the General Permit, "Authorization to Discharge Storm Water."

B. There is no fee for the transfer of the permit. Work may not begin until all transfer permit forms are signed and dated and the contractor identifies by name a person knowledgeable and experienced in the application and implementation of the Storm Water Pollution Prevention Plan, and has developed a chain of responsibility for all operators (subcontractors) on the site, in accordance to Part III.A.1 of the General Permit.

C. The Contractor shall be solely responsible for complying with the requirements of General Permit where Contractor is referenced in Part II.B.2: Permittee(s) for Parts II.B, II.C and IV.

The Contractor shall be responsible for providing all inspections, documentation, record keeping, maintenance, remedial actions, repairs required by the permit. All inspections, maintenance, and records required in the General Permit Part IV.E, Inspections and Maintenance, shall be the sole responsibility of the Contractor. The word "Permitee" in these referenced paragraphs shall mean "Contractor". Standard forms for logging all required inspection and maintenance activities shall be used by the Contractor. All inspection and maintenance forms used on this Project shall be turned over to the Engineer every two weeks for retention in accordance with

Part IV.E, Inspections and Maintenance of the permit.

The Contractor shall have all logs, documentation, inspection reports on site for Engineer's review and shall post the permit on site. The Contractor shall immediately rectify any shortcomings noted by the Engineer. All meetings with the MPCA, Watershed District, WMO, or any local authority shall be attended by both the Engineer and the Contractor or their representatives. No work required by said entities, and for which the Contractor would request additional compensation, shall be started without approval from the Engineer. No work required by said entities and for which the changes will impact the design or requirements of the Contract documents or impact traffic shall be started without approval from the Engineer.

The Contractor shall immediately notify the Engineer of any site visits by Local Permitting Authorities performed in accordance with Part V.H, Inspection and Entry.

D. If the Contractor fails to perform the requirements as listed herein, the Engineer will issue a Work Order detailing the required action. The Contractor shall start the required action within twenty-four (24) hour of receipt of the Work Order and continue the required action until the Project is brought into compliance with the permit. Failure to perform the required action as specified, shall subject the Contractor to a $1000/calendar day deduction.

The Contractor shall review and abide by the instructions contained in the permit package. The Contractor shall hold the County/City harmless for any fines or sanctions caused by the Contractor's actions or inactions regarding compliance with the permit or erosion control provisions of the Contract Documents.

(1806) DETERMINATION AND EXTENSION OF CONTRACT TIME

The Contract Time will be determined in accordance with the provisions of Mn/DOT I806 and the following:

Construction operations may begin after the date of Notice of Contract Approval. Construction operations shall be started on April 15, 2011, or within eight (8) Calendar Days after the date of notice of Contract Approval, whichever is later. Construction operations shall not commence prior to Contract Approval.

All work required under this Contract, except maintenance work and Final Clean Up shall be completed within 60 Working Days.

When, in the opinion of the Engineer, work on the Project cannot be performed due to failure of material delivery beyond the control of the Contractor, the Engineer will agree to a Suspension of Work in conformance with Mn/DOT 1803.4 and/or will cease the charging of working days, whichever the Engineer deems applicable.

A Resumption of Work Order will be issued by the Engineer after the Contractor has received delivery of the required material, and/or the Engineer will resume the charging of working days.

(1807) FAILURE TO COMPLETE THE WORK ON TIME

Liquidated damages will be assessed in accordance with the provisions of Mn/DOT 1807.

(1901) MEASUREMENTS OF QUANTITIES

Measurement of quantities shall be in accordance with the provisions of 1901, and the following:

During each days production, loads will be selected at random by the Engineer for spot checks of total tons being hauled from the producing plant. These spot checks will be taken two or more times each day, to ensure

that the actual load is equal to or exceeds the established uniform load weight. The results of these tests shall be recorded and the spot-check tickets given to the County as documentation of uniform loads. The loads selected for scale check shall be weighed by the Contractor on a platform scale which is large enough to weigh the entire hauling vehicle in one operation and which is accurate to within one percent (1%) of the net load weighed. If a commercial platform scale is used for the scale check, it shall have currently been tested and approved by the Division of Weight and Measures of the Minnesota Department of Public Service. Other scales may be tested by the Contractor in the presence of the Engineer or by the Divisions of Weight and Measures, Minnesota Department of Public Service. This will be considered incidental work and no direct compensation will be made therefore.

If a belt scale is used, it shall have automatic shutoff controls that can be calibrated for more than one net weight. Manual control of shutoff controls will not be permitted. All costs that the Contractor may incur as a result of this work will be considered to be incidental to the type of aggregate being weighed and no direct compensation will be made therefore.

(1904) EXTRA AND FORCE ACCOUNT WORK

The provisions of Mn/DOT 1904 are supplemented and/or modified with the following:

The Contractor is required to submit force account work itemized statements of costs in accordance with Mn/DOT 1904 to the Engineer on Mn/DOT form TP-21659 (Summary of Daily Force Account). Copies of this form can be obtained from the Engineer.

The following sentence shall be added to the second paragraph of Mn/DOT 1904:

"Under no circumstance will the negotiated unit price for Extra Work which is performed by a subcontractor include a Prime Contractor allowance which exceeds that provided for in 1904(4), Paragraph 3."

(1906) PARTIAL PAYMENTS

Partial payments shall be made in accordance with the requirements of 1906, except as modified below:

The first line of the third paragraph is modified to read: From the amounts ascertained as payable on each partial estimate, five (5) percent will be retained until final payment is made, unless reduced by authorization of the Engineer, on the last partial payment.

(1910) FUEL COST ADJUSTMENT

The provisions of 1910 are hereby deleted. There will be no fuel cost adjustment.

(2021) MOBILIZATION

The provisions of Mn/DOT 2021 are hereby deleted and replaced with the following:

2021.1 DESCRIPTION

Mobilization shall consist of preparatory work and operations, including, but not limited to, those necessary for the movement of personnel, equipment, supplies and incidentals to the Project site; for the establishment of all Contractor's offices and buildings or other facilities necessary for work on the Project. Mobilization may include bonding, permit, and demobilization costs. When the proposal does not have a lump sum item for Mobilization, all costs incurred by the Contractor for Mobilization shall be incidental to other work.

2021.2 BLANK

2021.3 BLANK

2021.4 BLANK

2021.5 BASIS OF PAYMENT

Based on the lump sum Contract price for mobilization, partial payments will be made as follows:

Mobilization Partial Payments		
	Pay Lesser of the Two	
% of Original Contract Amount Completed[1]	% of Mobilization	% of Original Contract Amount
5	50	3
15	75	5
25	100	5
95	100	N/A

[1] The Percent of Original Contract Amount Completed = the amount earned by the Contractor, excluding money earned for mobilization and material on hand, divided by the total value of the original contract (all bid items).

The total sum of all payments shall not exceed the original Contract amount bid for the mobilization item, regardless of the fact that the Contractor may have, for any reason, shut down work on the Project or moved equipment away from the Project and then back again.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the Contract.

Item No.	**Item**	**Unit**
2021.501	Mobilization	Lump Sum

(2051) MAINTENANCE & RESTORATION OF HAUL ROADS

Maintenance and restoration of haul roads shall be done in accordance with the provisions of 2051 except as modified below:

Prior to hauling of any materials on this project, Contractor shall submit a list of proposed haul roads to the Engineer for his approval. The Contractor shall also submit a list of all township roads that are proposed to be used as haul roads to the township official for their approval.

Contractor will be required to maintain and restore haul roads as per Specification No. 2051.4 Any costs that the Contractor may incur during this operation will be considered incidental and no direct compensation will be made therefore.

(2101) CLEARING AND GRUBBING

Clearing and grubbing operations shall be performed in accordance with the provisions of Mn/DOT 2101 and the following:

The first paragraph of Mn/DOT 2101.3D Disposal Limitations, is revised to read as follows:

The Contractor shall dispose of trees, brush, stumps, roots, and other debris or byproducts by chipping, marketing, or burning. The Contractor:

Mn/DOT 2101.3D(4) under Disposal Limitations, is revised to read as follows:

(4) Shall conduct burning only after the disposal options are deemed impractical, and in accordance with 2104.3, Minnesota Rules Chapter 7009 and any applicable local ordinances. At no time shall waste tires, rubble, or plastics or similar materials be used to ignite the wood resources.

Mn/DOT 2101.3D(5) under Disposal Limitations, is revised to read as follows:

(5) Shall not bury trees, brush, stumps, roots, and other debris or by-products within the State Right of Way.

Mn/DOT 2101.3D1(a) under Marketable Trees, is revised to read as follows:

(a) Shall not burn or waste marketable trees without having written proof from three potential woodusing industries or individuals that the wood is not wanted. This requirement only applies when the volume of marketable trees on the Project exceeds 75 m3 (100 cubic yards or 20 cords or 10,000 board feet).

Mn/DOT 2101.3D2c(3) under Disposal Deadlines and Locations, is revised to read as follows:

(3) Within the Right of Way by burning or chipping, when allowed.

The first paragraph of Mn/DOT 2101.3D3 Pine, is revised to read as follows:

The Contractor shall dispose of all non-marketable pine trees, brush, stumps, roots, and debris by chipping, debarking, burning, or covering with an air tight tarp within 20 calendar days of being cleared during the growing season.

Mn/DOT 2101.3D6 Burying, is hereby deleted in its entirety.

The first paragraph of Mn/DOT 2101.5 Basis of Payment, is revised to read as follows:

Payment for the accepted quantities of clearing and grubbing at the Contract prices per unit of measure will be full compensation for all removal and disposal costs, including the costs of securing outside disposal sites as needed and of carrying out the specified treatment in disposing of elm, oak wilt infected red oaks, pine, and marketable trees.

The Contractor shall remove only those trees necessary to be removed to construct this Project. All other trees shall be protected from damage during construction.

(2104) REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES

Abandoned structures and other obstructions shall be removed from the Right of Way and disposed of in accordance with the provisions of Mn/DOT 2104, except as modified below:

Measurement and payment for the removal and disposal of materials will be made only for those Items of removal work specifically included for payment as such in the Proposal and as listed in the Plans. The removal of any unforeseen obstruction requiring in the opinion of the Engineer equipment or handling substantially different from that employed in excavation operations, will be paid for as Extra Work as provided in Mn/DOT 1403.

All removals shall be disposed of by the Contractor outside the Right of Way in accordance with Mn/DOT 2104.3C3 to the satisfaction of the Engineer.

(2104) REMOVE AND HAUL TREATED WOOD

If the Contractor is required to dispose of treated wood, the provisions of Mn/DOT 2104 are supplemented with the following:

The Contractor can elect to reuse the treated wood for its original intended purpose. The Contractor shall furnish a completed Transfer of Ownership form to the Engineer prior to removing any treated wood from the Project limits. The Transfer of Ownership form is available at the following website:

http://www.dot.state.mn.us/environment/regulated-materials/pdf/treated-wood-transfer.pdf .

If the Contractor cannot or elects not to re-use the treated wood for its original intended purpose, but must be disposed, the following shall apply:

(A) The Contractor shall dispose of all waste treated wood in a MPCA permitted Minnesota solid waste or industrial landfill. The Contractor shall not dispose of waste treated wood in a demolition landfill. Within 30 days after the treated wood is transported to the landfill, the Contractor shall provide the Engineer with shipping manifests, scale tickets and invoices. Shipping manifests shall include, but are not limited to, the following information: specify treated wood as the type of waste, quantity of wood, date of hauling and disposal, and location of disposal.

(B) The Contractor has the option to chip creosote treated wood on site instead of hauling it to a landfill. After the wood is chipped on site, the Contractor shall transport the chipped wood off site to a MPCA permitted incinerator that is permitted to burn creosote treated wood. Call 651.366.3630 for list of incinerators permitted to burn creosoted treated wood. This applies to creosote treated wood only.

Measurement and payment for the removal and disposal of treated wood will be made only when specifically included for payment as such in the Proposal and as listed in the Plans. All other removal and disposal of treated wood operations shall be incidental work and no direct compensation will be made therefore.

(2105) EXCAVATION AND EMBANKMENT

At the preconstruction meeting, the Contractor shall present to the Engineer his proposed plan for construction, including as a minimum, his hauling operation and the amount, size, and type of equipment he will use for the project.

Material which is excavated and determined by the Engineer or the Engineer's representative to be suitable material shall be used for embankment construction or backfill. The suitable materials hall not be mixed with or contaminated with unsuitable soil in any amounts. Selection of suitable materials shall be considered to be incidental to the contract, with no direct compensation therefore. Any stockpiling or re-handling of these materials shall be considered incidental to the contract with no direct compensation therefore.

No topsoil shall be placed on the in-slopes until the slopes are approved by the Engineer.

The rate of depositing material on the embankment shall not exceed the capacity of the leveling and compaction equipment as determined necessary by the Engineer. Compaction of this material should not be delayed after being placed.

Roadway excavation and embankment construction shall be performed in accordance with the provisions of Mn/DOT 2105, except as modified below:

Mn/DOT 2105.2A2 Rock Excavation is revised to read as follows:

Rock excavation shall consist of all materials that cannot, in the Engineer's opinion, be excavated without drilling and blasting or without the use of rippers, together with all boulders and other detached rock each having a volume of 1 cubic meter (**1 cubic yard**) or more, but exclusive of those quantities that are to be paid for separately under the item of rock channel excavation.

The last paragraph in Mn/DOT 2105.3B Preparation of Embankment Foundation, is revised to read as follows:

Before backfilling depressions within the roadway caused by the removal of foundations, basements, and other structures, the Contractor shall enlarge the depressions as directed by the Engineer.

The first and second sentences in the second paragraph in Mn/DOT 2105.3D Disposition of Excavated Material, are revised to read as follows:

When the soils are so varied that selection and placement of uniform soils is not practical, the Contractor shall use disks, plows, graders or other equipment to blend and mix suitable soils to produce a uniform soil texture, moisture content and density; except that, all soils that contain 20 percent or more particles passing the 75 *u*m (**#200**) sieve shall be blended, mixed and dried with a disk, within the entire upper 2 meters **(6 feet)** of embankment. The disk shall meet the requirements of 2123 N, Disk Harrow. A disk is also to be used below the upper 2 meters **(6 feet)** of the embankment fill area, if in the opinion of the Engineer, the Contractor is not producing a uniform soil texture.

The fifth paragraph in Mn/DOT 2105.3D Disposition of Excavated Material, is revised to read as follows:

Peat, muskeg, and other unstable materials that are not to be used in the roadbed embankments shall be deposited in the areas indicated in the Plans or elsewhere as approved by the Engineer. All other material that is considered unsuitable for use in the upper portion of the roadbed shall be placed outside of a 1:1 slope down and outward from the shoulder lines on fills under 10 m (**30 feet**) in height or outside of a 1 vertical to 1.5 horizontal slope down and outward from shoulder lines on fills over 10 m (**30 feet**) in height, or used to flatten the embankment slopes, or disposed of elsewhere as approved by the Engineer.

The second sentence in the eighth paragraph of Mn/DOT 2105.3D Disposition of Excavated Material, is revised to read as follows:

No stones exceeding 150 mm (**6 inches**) in greatest dimension will be permitted in the upper 1 m (**3 feet**) of the roadbed embankment.

The fourth to last paragraph in Mn/DOT 2105.3D Disposition of Excavated Material, which begins with "All combustible debris materials (stumps, roots, logs, brush, etc.) together with all..." is hereby deleted and replaced with the following:

All noncombustible materials other than soils (oversized rock, broken concrete, metals, plastic pipe, etc.) shall be disposed of in accordance with 2104.3C.

The ninth paragraph of Mn/DOT 2105.5 is hereby deleted and replaced with the following:

If the Proposal fails to include a bid item for rock excavation or rock channel excavation, and material is uncovered that is so classified, excavation of the rock will be paid for separately at the Contract price for common excavation or common channel excavation, plus an additional $26.00 per cubic meter (**$20.00 per cubic yard**) . If no bid item is provided for common channel excavation, excavation of materials classified as rock channel excavation will be paid for at the Contract price for common excavation plus an additional $28.00 per cubic meter (**$21.50 per cubic yard**). Such stipulated prices for rock excavation will apply up to a maximum of 200 m3 (**260 cubic yards**) of excavation per item or to such quantity as may be performed by mutual consent prior to execution of an Extra Work agreement.

The eleventh paragraph of Mn/DOT 2105.5 is hereby deleted and replaced with the following:

(a) That portion of the additional excavation that is removed from below a plane parallel to and 5 m (**15 feet**) below the natural ground surface will be measured in 2 m (**5 foot**) depth zone increments and paid for separately at adjusted unit prices. The adjusted unit price will be equal

to the Contract bid price for muck excavation plus $0.39 per cubic meter (**$0.30 per cubic yard**) for the additional excavation within the 5-7 m (**15-20 foot**) depth zone and an additional $0.26 per cubic meter (**$0.20 per cubic yard**) for each additional 2 m (**5 foot**) increment of depth beyond 7 m (**20 feet**).

Compaction of all embankment construction, including culvert backfills, shall be obtained by the "Quality Compaction" method described in Mn/DOT 2105.3F.

No compensation will be made for the construction of the impervious soil seals.

Excess soils and rock not used on the Project shall become the property of the Contractor and shall be disposed of outside of the Right of Way. No direct compensation will be paid for the preparation of an acceptable Disposal Plan or for Off-Project disposal of excess materials. Disposal sites shall be left in a well graded condition with all solid wastes and boulders adequately covered.

Any Excess Salvaged Aggregate not incorporated into the project shall be stockpiled for removal by Blue Earth County maintenance staff and become property of Blue Earth County.

(2118) AGGREGATE SURFACING

This work shall consist of constructing aggregate surface courses in accordance with the provisions of Mn/DOT 2118 except as modified below:

Compaction shall be achieved by the "Quality Compaction" Method described in Mn/DOT 2211.3C or as directed by the Engineer.

(2118) AGGREGATE SURFACING CL-1 (M)

This work shall consist of constructing aggregate surface courses in accordance with the provisions of Mn/DOT 2118 except as modified below:

The third paragraph of 2118.3 shall be changed to read as follows:

Compaction shall be achieved by the "Quality Compaction" Method described in Mn/DOT 2211.3C or as directed by the Engineer.

The gradation for Class 1 is modified to 10-15 percent passing the No. 200 sieve. If the Contractor elects to add crushed quarry rock as a portion of the CL-1(M) aggregate shouldering, Los Angeles Rattler Loss Tests shall be taken and the test results submitted to the Engineer for his approval prior to using on the project. The Los Angeles Rattler Loss shall apply only to the crushed quarry rock portion of the aggregate. That portion of the crushed rock quarry material which is retained on the No. 4 sieve shall not show a loss exceeding 45 percent

(2118) AGGREGATE SURFACING CL-2(M)

This work shall consist of constructing aggregate surface courses in accordance with the provisions of Mn/DOT 2118 except as modified below:

The third paragraph of 2118.3 shall be changed to read as follows:

Compaction shall be achieved by the "Quality Compaction" Method described in Mn/DOT 2211.3C or as directed by the Engineer. Aggregate surfacing Cl-2 shall conform to the requirements of 3138 except as modified to require that no less than 10 percent nor more than 15 percent shall pass the No. 200 sieve. If crushed quarry rock (crushed limestone) is used, the Los Angeles Rattler Loss shall not exceed 45 percent (45%).

(2123) EQUIPMENT RENTAL
The provisions of 2123 are modified and/or supplemented with the following:

The following is added to Mn/DOT 2123.3 SPECIFIC REQUIREMENTS:

N Disk Harrow
The disk harrow shall be of sufficient size and mass to manipulate the soils to a depth of approximately 300 mm [12 inches] and shall meet the approval of the Engineer.

The following is added to Mn/DOT 2123.5 BASIS OF PAYMENT:

2123.610 Disk Harrow hour

(2130) APPLICATION OF WATER
The provisions of Mn/DOT 2130 are modified as follows:

The third paragraph of Mn/DOT 2130.5 is hereby deleted and the following substituted therefore:

Water applied by order or approval of the Engineer for dust control will be paid for at a unit price of $5.45 per cubic meter (**$20 per 1000 gallons**) in the absence of the Contract bid Item 2130.501.

(2211) AGGREGATE BASE
Aggregate base courses shall be constructed in accordance with the provisions of Mn/DOT 2211 except as modified below:

The Class 5 base material shall be completed at least seven (7) days in advance of the start of the bituminous surfacing. Class 7 material will be allowed for aggregate base.

Each aggregate source (Add-Rock) will meet the Aggregate (Quality Tests), Specification 3138 requirements as its own product sample, not as a combined/composite sample with other aggregates.

Compaction shall be achieved by the "Quality Compaction Method" described in Mn/DOT

The second sentence in Mn/DOT 2211.1 Description, is revised to read as follows:

The aggregate base shall be produced and placed under the Contractor's quality control program in accordance with the Mn/DOT Grading and Base Manual.

The last paragraph in Mn/DOT 2211. 3C2 Quality Compaction Method, is revised to read as follows:

The Engineer may elect to perform density tests as shown in the Mn/DOT Grading and Base Manual, as needed to assist inspection. The actual density obtained by testing the aggregate base must meet or exceed the requirements shown in 2211.3C1 Specified Density or 2211.3C3 Penetration Index Method in order to be acceptable.

Mn/DOT 2211.3F2(d) under Acceptance Testing is hereby deleted and replaced with the following:

(d) Samples for gradation testing will be taken randomly by the Engineer prior to compaction, in accordance with the random sampling method described in the Grading and Base Manual. All gradation tests will be reported to the nearest whole number, except the 75µ [**#200**] sieve will be

reported to the nearest one tenth of one percent (0.1%).

Mn/DOT 2211.3F2(j) under Acceptance Testing, is revised to read as follows:

(j) One gradation sample will be taken from each sublot and tested. Payment will be based on the average results from the four sublot samples for each specified sieve.

The third paragraph after Mn/DOT 2211.3F2(k) under Acceptance Testing, is revised to read as follows:

A 5% price reduction will be assessed to both individual or averaged test lots for each test result that fails to meet specified gradations for sieve sizes not listed in Tables 2211-B and 2211-C by more than 2%. These price reductions are cumulative and shall be analyzed both separately and averaged by lot when applicable.

Table 2211-B in Mn/DOT 2211.3F2 Acceptance Testing, is hereby deleted and replaced with the following:

Table 2211-B
AGGREGATE BASE PAYMENT SCHEDULE
(4 Sublots/4 Samples)

% Passing Outside Specified Limits*		
4.75 mm (**#4**), 2.00 mm (**#10**), and 425 µm (**# 40**) Sieves	75 µm (**#200**) Sieve	Acceptance Schedule (Price Reduction)
1	0.1	5%
----------	0.2	6%
----------	0.3	9%
----------	0.4	11%
----------	0.5	14%
2	0.6	15%
> 2	> 0.6	Corrective Action

*Based on average of 4 tests

Price reductions for more than one failing sieve size shall be cumulative. The compensation due to the Contractor for the quantity of material represented by the failing test results shall be reduced by the sum of the respective percentages.

The contractor does not have the option of taking a price reduction in lieu of complying with the Specifications.

The following is added to Table 2211-C in Mn/DOT 2211.3F2 Acceptance Testing:

Substantial compliance will be applied to no more than one test failure. Substantial compliance will be eliminated when two or more test failures occur and test failures meeting substantial compliance will be subject to the next higher price reduction. One sieve failure = one test failure. Test failures for each material type will be treated separately.

The following is added to Table 2211-D in Mn/DOT 2211.3F2 Acceptance Testing:

Substantial compliance will be applied to no more than one test failure. Substantial compliance will be eliminated when two or more test failures occur and test failures meeting substantial compliance will be subject to the next higher price reduction. Test failures for each material type will be treated separately.

(2357) BITUMINOUS TACK COAT

The provisions of Mn/DOT 2357 are hereby deleted and replaced with the following:

2357.1 DESCRIPTION

This work shall consist of the application of bituminous material (emulsion or liquid asphalt) on a bituminous or concrete pavement prior to paving a new lift of Hot Mixed Asphalt.

2357.2 MATERIALS

A .....Bituminous Material 3151

The bituminous material for tack coat will be limited to one of the following kinds of emulsified asphalt. However, the Engineer may authorize the use of medium cure cutback asphalt (MC-250) during the early and late construction season when it is anticipated the air temperature may drop below 32 degrees Fahrenheit.

Allowable grades are as follows:

Emulsified Asphalt
Anionic.....SS-1, SS-1h
Cationic CSS-1, CSS-1h

Cutback Asphalt
Medium Cure Liquid Asphalt.....MC-250

Only Certified Sources are allowed for use. Mn/DOT's Certified Source List is located at the following link: http://www.dot.state.mn.us/products/index.html.

2357.3 CONSTRUCTION REQUIREMENTS

A Restrictions

Tack coat operations shall be conducted in a manner that offers the least inconvenience to traffic, with movement in at least one direction permitted at all times without pickup or tracking of the bituminous material.

The tack coat shall not be applied when the road surface or weather conditions are unsuitable as determined by the Engineer. The daily application of tack coat shall be limited to approximately the area on which construction of the subsequent bituminous course can reasonably be expected to be completed that day.

B Equipment

The bituminous material shall be applied with a distributor meeting the requirements of 2321.3C1.

C Road Surface Preparations

At the time of applying bituminous tack coat material, the road surface shall be dry and clean and all necessary repairs or reconditioning work shall have been completed as provided for in the Contract and approved by the Engineer.

All objectionable foreign matter on the road surface shall be removed and disposed of by the Contractor as the Engineer approves.

Preparatory to placing an abutting bituminous course, the contact surfaces of all fixed structures and the edge of the in-place mixture in all courses at transverse joints and in the wearing course at longitudinal joints shall be given a uniform coating of liquid asphalt or emulsified asphalt, applied by methods that will ensure uniform coating.

D Application of Bituminous Tack Coat Material

Unless otherwise indicated in the plans or provisions, the bituminous tack coat material shall be applied within the application rates shown below in Table 2357.3-D as based on pavement type or condition and type of bituminous material. The Engineer shall approve the time and rate of application. Only a Mn/DOT certified asphalt emulsion supplier is allowed to dilute the emulsion. When diluted, the supplier shall provide asphalt emulsion diluted 1 part emulsion to 1 part water. Dilution of asphalt emulsion in the field is not allowed. The Engineer may waive the tack coat requirement when multiple lifts are paved on the same day.

Table 2357.3-D
Tack Coat Application Rates

Pavement Type or Condition	Application Rate, liter/square meter **[gallons/sy]**		
	Undiluted Emulsion SS-1, SS-1H, CSS-1, CSS-1H	Diluted Emulsion (1 part Emulsion to 1 part water) [1] SS-1, SS-1H, CSS-1, CSS-1H	MC Cutback[2] MC-250
New HMA	0.14 – 0.23 **[0.03 – 0.05]**	0.28 – 0.46 **[0.06 – 0.10]**	0.14 – 0.23 **[0.03 – 0.05]**
Aged HMA[3] or Un-milled PCC	0.23 – 0.37 **[0.05 – 0.08]**	0.46 – 0.69 **[0.10 – 0.15]**	0.23 – 0.37 **[0.05 – 0.08]**
Milled HMA or Milled PCC	0.32 – 0.46 **[0.07 – 0.10]**	0.64 – 0.92**[0.14 – 0.20]**	0.32 – 0.46 **[0.07 – 0.10]**

1- As provided by the asphalt emulsion supplier
2- When approved by the Engineer
3- Older than 1 year

The temperature of the bituminous material at the time of application shall be approved by the Engineer, within the limits specified following:

SS-1, SS-1H, CSS-1, CSS-1H ..... 21 to 71°C (**70 to 160° F**)
MC-250 ..... 74 to 104°C (**165 to 220° F**)

Unless otherwise directed, sand shall be spread on the newly tacked surface at pedestrian crossings.

2357.4 METHOD OF MEASUREMENT

A Bituminous Material
Bituminous material used for tack coat will be measured by volume at 15°C (**60° F**).

2357.5 BASIS OF PAYMENT
Payment for the accepted quantity of asphalt emulsion and cutback shall be at the Contract price per unit of measure for undiluted asphalt emulsion and neat cutback. Furnishing

and applying sand on newly tacked surfaces at pedestrian crossings shall be at no expense to the Department with no direct compensation being made therefore. Should the Contract fail to include a Contract Item covering payment for the bituminous material used for tack coat, all costs of furnishing and applying bituminous tack coat material will be included in the compensation provided for the bituminous mixture, with no measurement made of the bituminous material used and with no direct compensation being made therefore.

Payment for the tack coat will be made on the basis of the following schedule:

Item No.	**Item**	**Unit**
2357.502 (**gallon**)	Bituminous Material for Tack Coat	Liter

(2360) SPECIFICATION SUPERPAVE HOT MIX ASPHALT (TYPE SP)

Mn/DOT 2360 is hereby deleted from the Mn/DOT Standard Specifications and replaced with the attached **Combined 2360/2350 (Gyratory/Marshall Design) Specification**.

Mix Designation Numbers for the bituminous mixtures on this Project are as follows:

Type SP 19.0 Wearing Course Mixture (2, B)

Pavement smoothness requirements of 2360.7C **will not** apply on this Project. The requirements of 2360.7B Surface Requirements (straight edge specification) **will** apply.

Compaction Operations

Compaction shall be obtained by the Ordinary Compaction Method in accordance with specification 2360.6C and the following:

The first paragraph of 2360.6Cis hereby deleted.

Contractor shall be required to use three individual rollers for compaction. Pneumatic shall be used for intermediate rolling, vibratory steel for breakdown, and a steel static roller for finish rolling. All rollers shall be self-propelled and shall meet the requirements of specification 2360 as pertains to rollers. All the rollers shall be equipped with spray attachments for moistening all rolling surfaces on both the front and back. Contractor may be required to add liquid detergent to water. The vibratory steel rollers shall have a minimum total weight of 8 tons.

In addition to a paver being used to place the mainline bituminous mixtures, Contractor shall furnish and use a separate paver for placing all driveways, intersections, and other areas not on the mainline. This work shall be done in conjunction with the placing of all mainline bituminous materials (Wearing and Non-wearing Courses) unless otherwise directed by the Engineer. Using the mainline paver for this work (during mainline production) will not be permitted. When a second paver is required by the Engineer for use on the mainline paving, all electronic grade controls shall be in satisfactory working condition. In the case of matching existing surfaces on both sides of the paver a joint matching device will be required on both sides of the paver for reference control in matching existing surface grades at joints.

The Contractor's paver shall be equipped with a Trans Tech Joint Maker or an approved equivalent joint compacting device. This unit shall be considered to be a part of the paver and no other direct compensation will be made therefore.

All necessary work needed in preparing driveways, field approaches, intersections, and any other area designated by the Engineer shall be done by the Contractor with no direct payment being made therefore.

BASIS OF PAYMENT

Payment for the accepted quantities of asphalt mixture used in each course at the Contract prices per unit of material shall be compensation in full for all costs of constructing the asphalt surfacing as specified, including the costs of furnishing and incorporating any asphalt binder, mineral filler, hydrated lime, or anti-stripping additives that may be permitted or required.

If the production lab density at the design gyrations at the recommended or established asphalt content is in excess of 2565 kg/m^3 [**160 pounds per cubic foot**], payment for mixture will be calculated at the following percent of the Contracted unit price.

% Payment = {100 - [{100 x (production density at design gyrations - 2565)} / 2565]}
% Payment = {100 - [{100 x (production density at design gyrations - 160)} / 160]} ENGLISH

In the absence of Contract items covering shoulder surfacing and other special construction, the accepted quantities of material used for these purposes will be included for payment with the wearing course materials.

The Contractor is responsible to complete yield checks and monitor thickness determinations so that the constructed dimensions correspond with the required Plan dimensions throughout the entire length of the Project. The tolerances for lift thickness shown in 2360.7A and B, Thickness and Surface Smoothness Requirement is for occasional variations and not for continuous over-running or under-running, unless ordered or Authorized by the Engineer.

Payment for the item of asphalt mixture production at the Contract unit price of mixture produced shall be compensation in full for all costs of producing the mixture and loading it on board the Department's trucks at the mixing plant. The provisions of Mn/DOT 1903 are modified to the extent that the Department will not make a price adjustment in the event of increased or decreased quantities of asphalt mixture items. Payment for plant mixed asphalt surface will be made on the basis of the following schedule:

Item No.	Item	Unit
2360.501	Type SP (1) Wearing Course Mixture ((3),(4))	metric ton [**ton**]
2360.502	Type SP (1) Non Wearing Course Mixture ((3),(4))	metric ton [**ton**]
2360.503	Type SP (1) (2) Course Mixture ((3),(4)) (5) mm [**inch**] thick	square meter [**square yard**]
2360.504	Type SP (1) (2) Course Mixture ((3),(4))	[**square yard inch**]
2360.505	Type SP (1) Bituminous Mixture for Specified Purpose	metric ton [**ton**]
2360.506	Type SP (1) Bituminous Mixture Production	metric ton [**ton**]

(1) Aggregate Size Designation, 9.5, 12.5 or 19 as appropriate.
(2) "Wearing" or "Non Wearing" as appropriate.
(3) Traffic Level as per Table 2360-1-A.
(4) AC binder grade designation.
(5) Specified lift thickness.

(2442) REMOVAL OF EXISTING BRIDGES

This work shall consist of the removal and disposal of inplace bridges in accordance with Mn/DOT 2442 and the following:

All materials removed for Bridge No. 90556 shall become the property of the Contractor.

MIGRATORY BIRD PROTECTION

Bidders are advised that bridge sites such as those in this Contract are usually attractive places for swallows and phoebes to build nests and raise their young.

Bidder's attention is directed to the fact that swallows are protected by the Federal Migratory Bird Treaty Act 50 CFR 21, and the knowing destruction of swallows or their active nests is a felony punishable by a fine and/or jail term. Existing Bridge No. 90556 is known to support nesting swallows. Cliff swallows and barn swallows often build their nests on bridges that are over or near water.

The first priority for this Project is for the Contractor to take measures to prevent birds from building new nests before May 15 and until such time as the bridge construction activities are completed, or no longer threaten the nests. Birds should also be prevented from using old nests from the previous season. Old nests can be removed. An active nest is a nest with eggs or chicks. An unfinished nest is not considered active unless eggs have been laid. Acceptable measures include hosing or knocking down any unfinished or inactive nest as it is being built. To prevent nesting, cover the undersides and nesting surfaces of the bridge with tamps, fabric or netting to prevent nesting. No permit is required as long as this activity is done prior to May 15 or the active nesting period.

If it is impossible to remove nests prior to May 15, the Contractor must obtain the required depredation permits and deal with the swallows on the bridge in a manner that is acceptable to the U.S. Fish and Wildlife Service (USFWS) and the Minnesota Department of Natural Resources (DNR). Depredation permits from the USFWS are required for the destruction of migratory bird nest on bridges during the nesting season (May 15 to September 1). The DNR also has permit authority over protected wildlife. USDA Animal Damage Control is also involved. The contact persons for obtaining the depredation permits are as follows:

Marilyn Balancer
U.S. Fish & Wildlife
Migratory Bird Office
Federal Building, One Federal Drive
Fort Snelling, MN 55111-4056
Phone: (651) 725-3313
Fax: (651) 725-3509

Blair Joselyn
Research Unit Supervisor
Dept. of Natural Resources
Lafayette Road
St. Paul, MN 55101
Phone: (651) 296-3344

USDA - APHIS
ADC
3l6 North Roberts Street
St. Paul, MN 55105
Phone: (651) 290-3156

The Contractor should allow a minimum of 21 days for processing the permit request.

All permits issued by the USFWS contain the requirement that any young swallows and eggs removed from the bridges must be turned over to a licensed rehabilitator for care and subsequent release. The rehabilitator must be contacted prior to the removal of any active nests to make sure that their services will be available. Contact the Department of Natural Resources' Central Office for federal licensed rehabilitators.

Summary

(1) Bridge work may be performed outside of the nesting season, i.e., before May 15th or after September 1st. No permit is required for this activity unless active nests are involved.

(2) The portions of the bridge providing nesting sites (undersides, overhangs, and ledges) may be covered with tarps, fabric or netting to prevent the birds from nesting. Other acceptable options are to diaper the underside of the bridge or hang filter reinforced with wire mesh from the side of the bridge to a foot below the water line. No permit is required for this activity. These measures

should be implemented before May 15.

(3) Old nests from the previous year and unfinished nests (Not Active = No eggs or chicks present) can also be removed by hosing or knocking the nests down. No permit is required for this activity as long as it is done before May 15.

(4) Bridge work may be begun on August 15th in the hope that all or most of the birds will have completed nesting for the season. The risk with this approach is that some late nesters may still be present. If birds are still present, they must be turned over to a licensed rehabilitator. This activity requires a permit whenever there are active nests.

All costs of getting the necessary permit, rehabilitators, screening, properly disposing of swallow nests and/or swallows and eggs from the bridge, and all other work associated with removal of swallow nests shall be considered incidental to bridge construction.

Bidders
Bidders are advised that prior to the Contract starting date any measures required for removal of nests or prevention of nesting will be performed by Mn/DOT forces.

NOTE: The network of rehabilitators was originally established to take in limited numbers of orphaned or abandoned animals from a local area. The network, as it is set up at the present, is neither able nor willing to commit to handling large numbers of birds on a statewide basis. Before deciding to employ the services of a rehabilitator, the rehabilitator should be contacted to make sure that their services will be available and that they have federal permits.

(2501) PIPE CULVERTS
This work consists of furnishing and installing pipe culverts and fittings in accordance with the Plans, the applicable Mn/DOT Standard Specifications, Section 12 of the AASHTO LRFD Bridge Design Specifications, the attached detail "PLASTIC PIPE INSTALLATION REQUIREMENTS", and the following:

MEASUREMENT
Measurement will be made by the length of pipe culvert furnished and installed as specified.

PAYMENT
Payment for pipe culverts will be made in accordance with the schedule set forth below at the appropriate Contract unit bid price for each separate item of work, which shall, in each instance, be compensation in full for the costs of all materials, equipment, and labor required to complete the work as specified, to the satisfaction of the Engineer.

Item No.	Description	Unit
2501.603	___ mm [__"] Pipe Culvert	meter [**linear foot**]

(2511) RIPRAP
Riprap shall be furnished in accordance with the provisions of 2511 and the following:

The Contractor shall place riprap at locations shown in the plan and to dimensions as directed by the Engineer. The use of salvaged concrete materials will not be permitted for use as riprap. Riprap will be paid for by in-place volume of the material based on the surface dimensions staked and the specified thickness. Payment will not be made by weight of material basis.

The unit price of riprap shall include the furnishing and placement of Granular Filter under the entire riprap

areas. Granular Filter Material shall be considered incidental with no direct payment made therefore. Geotextile Fabric will not be allowed as a substitution for Granular Filter Material.

(2573) STORM WATER MANAGEMENT

The provisions of Mn/DOT 2573 are supplemented and/or modified with the following:

The second paragraph of Mn/DOT 2573.3A1 Erosion Control Supervisor, is revised to read as follows:

The Erosion Control Supervisor shall be a responsible employee of the prime Contractor and/or duly authorized by the prime Contractor to represent the prime Contractor on all matters pertaining to the NPDES construction stormwater permit compliance. The Erosion Control Supervisor shall have authority over all Contractor operations which influence NPDES permit compliance including grading, excavation, bridge construction, culvert installation, utility work, clearing/grubbing, and any other operation that increases the erosion potential on the Project. In addition, the Erosion Control Supervisor shall **implement the Contractor's quality control program and other provisions in accordance with 1717.2 and** be available to be on the Project within 24 hours at all times from initial disturbance to final stabilization as well as perform the following duties:

Mn/DOT 2573.3 A2, Construction of Temporary Storm Water Basins, is revised to read as follows:

Temporary storm water basins shall be constructed concurrently with the start of soil disturbing activities whenever practicable. The basins must be made fully functional and have storm water runoff from the localized watershed directed to the basins. The exposed sideslopes of the basins must be mulched and/or seeded within the time periods as set forth in 1717, or as directed by the Engineer.

The second paragraph of Mn/DOT 2573.3 A5, Vehicle Tracking On to Paved Surfaces, is revised to read as follows:

The Contractor is responsible for insuring paved streets are clean at the end of each working day or more often as necessary to provide safety to the traveling public. Tracked sediment on paved surfaces must be removed by the Contractor within 24 hours of discovery, in accordance with 1717.2. Payment for street sweeping to provide safe conditions for the traveling public, environmental reasons or regulatory requirements shall be as provided in accordance with 1514.

The first sentence of Mn/DOT 2573.3E2 is revised to read as follows:

The bioroll shall be installed and anchored with wood stakes. The stakes shall be at a minimum nominally 25 mm x 50 mm **(1 inch x 2 inch)** and a minimum of 400 mm **(16 inches)** long with a pointed end.

The first paragraph of Mn/DOT 2573.3J Filter Log Installation, is revised to read as follows:

J Filter Log Installation

Filter logs shall be placed in accordance with the Plan. Straw and wood fiber filter logs shall be staked in place with wood stakes. Wood stakes shall be at a minimum 25 x 51 mm (**1 x 2 inch**) nominal size by 400 mm (**16 inches**) long. The stakes shall be driven through the back half of the log at an angle of approximately 45 degrees with the top of the stake pointing upstream. When more than one log is needed for length, the ends shall be overlapped 150 mm **(6 inches)** with both ends staked. Staking shall be every 0.3 m **(1 foot)** along the log unless precluded by paved surface or rock.

Mn/DOT 2573.5 Basis of Payment, is revised to read as follows:

Payment for storm water management and sediment control items will be compensation in full for all

labor, materials, equipment, and other incidentals necessary to complete the work as specified, including the costs of maintenance and removal as required by the Contract. The Contractor will receive compensation at the appropriate Contract prices, or in the absence of a Contract bid price, according to the following unit prices, or in the absence of a Contract price and unit price, as Extra Work. In the absence of a Contract item for Erosion Control Supervisor, this work shall be considered incidental.

Mn/DOT 2573.5 E, Unit Prices, is revised to read as follows:

The Department will pay the following unit prices for temporary sediment control items in the absence of a Contract bid price:

(1) Bale Barrier $13.45/m (**$4.10 per linear foot)**
(2) Silt Fence, Heavy Duty $10/m (**$3.00 per linear foot**)
(3) Flotation Silt Curtain, Type: Still Water, 1.2 m (**4 foot**) depth$54.10/m (**$16.50 per linear foot**)
(4) Sediment Trap Excavation $7.20/$m^3$ (**$5.50 per cubic yard**)
(5) Bituminous Lined Flume $6.00/$m^2$ (**$5.00 per square yard**)
(6) Silt Fence, Type Machine Sliced $6.50/m ($**2.00 per linear foot**)
(7) Sediment Removal, Backhoe $175 per hour
(8) Filter Log, Type Straw Bioroll $1.00/m (**$3.00/foot**)
(9) Filter Log, Type Rock Log $16.50/m (**$5.00/foot**)
(10) Flocculant Sock $300 each

(2575) CONTROLLING EROSION AND ESTABLISHING VEGETATION

The provisions of Mn/DOT 2575 are hereby modified and/or supplemented with the following:

Mn/DOT 2575.3D paragraph 2 and table 2575-2 are hereby deleted and replaced with the following:

The Contractor shall sow the seed uniformly at the rate of application specified in Table 3876-5.

Mn/DOT 2575.4D is hereby deleted and replaced with the following:

D Seed
When a bulk rate seed mixture is specified as shown in table 3876-5, the measurement will be made on that bulk mass. When a PLS rate seed mixture is specified as shown in table 3876-5, the measurement will be made on the PLS mass.

Mn/DOT 2575.5C is hereby deleted and replaced with the following:

C Seed
When a seed mixture is specified at a bulk rate as shown in table 3876-5, the payment will be made on that bulk mass. When a seed mixture is specified at a PLS rate as shown in table 3876-5, the payment will be made on the PLS mass.

Payment for seed not meeting germination and purity or PLS requirements of 3876 shall be subject to 1503. When components are missing from the specified mixture the affected seeded areas shall be reseeded with the missing components by the Contractor at no additional cost to the Department.

(3103) PORTLAND-POZZOLAN CEMENT

Mn/DOT 3103 is hereby deleted and replaced with the following:

Portland-Pozzolan cement shall be from certified sources only. Portland-Pozzolan cement furnished under

this Specification shall conform to AASHTO M 240, Type IS, Type I(SM), Type IP, Type I(PM), Type IP-A or any other portland-pozzolan cement as approved by the Concrete Engineer, except as modified by the following:

(1) The fly ash constituent of the interground cement shall not exceed 20 percent.
(2) The fly ash constituent of blended cement shall not exceed 15 percent.
(3) The ground granulated blast furnace slag constituent of the interground cement shall not exceed 35 percent.
(4) The ground granulated blast furnace slag constituent of blended cement shall not exceed 35 percent.

All delivery invoices shall include a standardized Cement Certification Statement which is as follows: (insert company name) certifies that the cement produced at (insert plant and location) conforms to AASHTO and Mn/DOT Specifications for Type (insert Type) cement. The change of source or color, or both, of cement on a Project will not be permitted without the written approval of the Concrete Engineer.

(3137) COARSE AGGREGATE FOR PORTLAND CEMENT CONCRETE

The provisions of Mn/DOT 3137 are supplemented and/or modified with the following:

Mn/DOT 3137.2B1 shall be modified with the following:

Class A aggregate may contain no more than 4.0% non-Class A aggregate. This recognizes that some quarries may contain small pockets of non-Class A aggregate within that source. Intentional blending or addition of non-Class A aggregate is strictly prohibited.

Mn/DOT 3137.2D1(h) shall be deleted and replaced with the following:

(h)Flat or Elongated Pieces (maximum thickness less than 25 percent of the maximum width, or maximum length more than 3 times the maximum width) 15%

Mn/DOT 3137.2D1(i) shall be deleted and replaced with the following:

(i) At the point immediately preceding introduction into the concrete:
Class A and Class B aggregates, as long as the material passing the 75 µm sieve (**#200**) for each individual fraction consists of dust from the fracture and is essentially free from clay or shale..... 1.5%
Class C and D aggregates, the material passing the 75 µm sieve (**#200**) for each individual fraction..... 1.0%

Mn/DOT 3137.2D1(k) shall be deleted.

Mn/DOT 3137.2D2 shall be modified with the following:

Aggregates used in precast concrete panel facings for Mechanically Stabilized Earth (MSE) walls shall be Class A or shall meet the requirements of 3137.2D2.

Mn/DOT 3137.2D2(c), 3137.2D2(g) and 3137.2D2(h) shall be deleted and replaced with the following:

(c)Total Spall Materials (includes items a and b percentages of the above, plus other iron oxide particles, unsound cherts, pyrite, and other materials having similar characteristics). Retained on the 4.75 mm (#4) sieve as a percentage of the total material..... 0.5%
(g) ..... Class C and Class D aggregates with a maximum carbonate by mass (weight). 30.0%
(h) ..... Class B aggregate with a maximum absorption 1.75%

Mn/DOT 3137.2D3 shall be modified to include the following:

Concrete pavement shall include bridge approach panels and concrete pavement rehabilitation.

Mn/DOT 3137.2D3(c) shall be deleted and replaced with the following:

(c) ..... Class C aggregate with a maximum carbonate by mass (weight) 30.0%

Mn/DOT 3137.2E shall be deleted and replaced with the following:

Coarse aggregate shall be the uniform product of the plant producing it, unless it is necessary to remove some of the sizes in order to meet the following gradation requirements. Unless otherwise specified, coarse aggregate shall contain all of the sizes included within the specified limits. Broken or noncontiguous gradations will not be permitted.

The gradations required, or which will be permitted at the Contractor's option, will be specified in the concrete mix number unless modified in the Special Provisions of the Contract.

The requirements of these gradations are listed in Table 3137-2. Whenever the size of coarse aggregate selected for use has less than 100 percent passing the 25.0 mm (1 inch) sieve, the coarse aggregate shall be produced, furnished, and proportioned for the work in at least two fractions. The Contractor shall maintain a uniform gradation in each size of coarse aggregate used during the handling and batching operations.

When all of the coarse aggregate is from the same source, the Contractor may choose to screen aggregates into separate proportions to aid in controlling the gradation of the material. Compliance with gradation and quality requirements is determined based on the composite values of the combined aggregates.

When coarse aggregate comes from multiple sources, the Contractor may combine these sources to meet gradation requirements but each individual aggregate fraction shall meet quality requirements prior to blending unless otherwise allowed by the Concrete Engineer on a case-by-case basis.

(3138) AGGREGATE FOR SURFACE AND BASE COURSES

The provisions of Mn/DOT 3138 are hereby modified as follows:

The second paragraph of Mn/DOT 3138.2B Gradation Tables 3138-1 and 2, is revised to read as follows:

If Class 7 is substituted for Classes 1, 3, 4, 5, or 6, it shall meet the gradation requirements of the substituted class (Table 3138-1); except that, for Class 5 and 6, up to 5 percent by mass **(weight)** of the total composite mixture may exceed 25.0 mm (**1 inch**) sieve but 100 percent must pass the 37.5 mm (**1.5 inch**) sieve. Surfacing aggregate mixtures containing salvaged materials shall meet the gradation requirements of the materials specified in the Plan. All gradations will be run on the composite mixture before extraction of the bituminous material.

TABLE 3138-1 in Mn/DOT 3138.2B Gradation Tables 3138-1 and 2, is hereby deleted and replaced with the following:

TABLE 3138-1
BASE AND SURFACING AGGREGATE
Total Percent Passing

Sieve Size	Class 1 **(A)**	Class 2	Class 3 **(A)**	Class 4 **(A)**	Class 5 **(A) (B)**	Class 6 **(A) (B)**
75 mm (3 inches)	--	--	--	--	--	--
50 mm (2 inches)	--	--	100	100	--	--
37.5 mm (1½ inches)	--	--	--	--	--	--
25.0 mm (1 inch)	--	--	--	--	100	100
19.0 mm (3/4 inch)	100	100	--	--	90-100	90-100
9.5 mm (3/8 inch)	65-95	65-90	--	--	50-90	50-85
4.75 mm (No. 4)	40-85	35-70	35-100	35-100	35-80	35-70
2.00 mm (No. 10)	25-70	25-45	20-100	20-100	20-65	20-55
425 µm (No. 40)	10-45	12-30	5-50	5-35	10-35	10-30
75 µm (No. 200)	8.0-15.0	5.0-13.0	5.0-10.0	4.0-10.0	3.0-10.0	3.0-7.0

(A) When salvaged materials are substituted for another class of aggregate, it shall meet the gradation requirements of the class being replaced except as amended in 3138.2 B.

(B) The gradation requirements for aggregates containing 60% or more crushed quarry rock may be amended with the concurrence of the Project Engineer and the Grading and Base Engineer.

The first paragraph of Mn/DOT 3138.3 Sampling and Testing, is hereby deleted and replaced with the following:

Samples for testing to determine compliance with the aggregate gradation specifications for base and shoulder surfacing shall be obtained from the roadway at a time when the material is ready for compaction. However, Class 1, 2, and 7 shoulder surfacing aggregates may be sampled from a stockpile, tested, and accepted before roadway placement, provided that:

(a) No more than 25 percent of the stockpile samples fail to meet gradation requirements.
(b) The average of all stockpile tests meet requirements.
(c) The Contractor mixes the material during placement to the satisfaction of the Engineer.

The fifth paragraph of Mn/DOT 3138.3 Sampling and Testing, is revised to read as follows:

The stockpile shall be sampled at the rate of one field gradation test per 1,000 metric tons (**tons)** of aggregate used on the Project.

(3236) REINFORCED CONCRETE PIPE

The provisions of Mn/DOT 3236 are modified and/or supplemented with the following:

Manufacturers of reinforced concrete pipe may produce an alternate "offset joint" on the spigot end of the pipe. This type of offset joint is to be used with the profile or prelubricated pipe seal systems. See Mn/DOT Standard Plate 3006.

The first paragraph of Mn/DOT 3236.2A3 is hereby deleted and replaced with the following:

Cement substitutions as addressed in 2461.3D are hereby modified as follows to allow:

(a) 30 percent Class F or Class C fly ash by weight
(b) 35 percent ground granulated blast furnace slag by weight
(c) 35 percent substitution with a combination of ground granulated blast furnace slag and Type F or Type C fly ash by weight

All other provisions of 2461.3D shall apply. The use of admixtures shall conform to 2461.3E.

(3139) GRADED AGGREGATE FOR BITUMINOUS MIXTURES

The graded aggregate for use in bituminous mixtures shall meet the provision of 3139, except as modified below:

Delete Provision 3139B Gradation

Delete Paragraph 3139.2D Quality Requirements and insert the following:

Each Class A and each Class C Aggregate shall not exceed 5.0 percent spall and the lumps in the fraction retained on the No. 4 sieve shall not exceed 0.5 percent.

(3301) REINFORCEMENT BARS

The third to the last paragraph of Mn/DOT 3301.2 is hereby deleted and replaced with the following:

When epoxy coated reinforcement bars are specified, coating shall be in conformance with AASHTO M 284M/M 284-06. Application of epoxy coating shall be made in a fusion bonded epoxy coating plant that has been granted "Certification" by the Concrete Reinforcing Steel Institute, or an organization approved by the Materials Engineer.

(3754) MEMBRANE CURING COMPOUND

The provisions of Mn/DOT 3754 are supplemented and/or modified with the following:

Mn/DOT 3754.2A shall be deleted and replaced with the following:

Only Mn/DOT approved membrane curing compounds will be allowed for use. Mn/DOT shall pre-approve all curing compounds. The most current approved lots and batches with product expiration dates are available from the Mn/DOT Approved Products website. All curing compounds shall comply with the requirements of the Mn/DOT Curing Compound Manufacturer Approval Program, including pre-testing of all materials by the manufacturer.

All membrane curing compound materials shall conform to ASTM C309 for the type specified in the Contract. The concrete curing compound furnished shall be white pigmented Type 2, Class B. A Type 1-D curing compound shall be used on any colored concrete or architectural concrete where a finished white surface is not desired. The use of Type 1-D curing compound may be allowed in other concrete applications by special provisions or at the discretion of the Engineer.

These membrane curing compounds must be protected from freezing prior to application. This material shall be tested at an application rate of 5 m^2 per liter (**200 square feet per gallon**).

All membrane curing compound materials shall be formulated so as to maintain the specified properties for a minimum of 1 year from date of manufacture. The Engineer may require additional testing before use to determine compliance with these specifications if the compound has not been used within one year or whenever the Engineer has reason to believe the compound is no longer satisfactory.

Mn/DOT 3754.2B shall be modified with the following:

The curing compound meeting the requirements of 3754.2B shall be used on concrete bridge applications unless otherwise directed by the Special Provisions of the Contract or by the Engineer.

(3876) SEED

The provisions of Mn/DOT 3876 are supplemented and/or modified with the following:

The second paragraph of Mn/DOT 3876.1 is hereby deleted and replaced with the following:

Pure live seed (PLS) is the percent of seed germination plus dormant and/or hard seed times the percent of seed purity of each species divided by 100.

Mn/DOT 3876.2A General Requirements is hereby deleted and replaced with the following:

A General Requirements

All seed lots shall conform to the latest seed law of the State (Minnesota Statutes 21.80-21.91, last revised 8/2/06), and any applicable federal regulations, including those governing labeling and weed seed tolerances. Seed lots sold or offered for sale in the state of Minnesota are subject to inspection, sampling, and testing for verification of label claims and compliance with the Minnesota Seed Law by the Department of Agriculture (M.S. 18J.04). Tolerances for germination and purity factors will be applied as established in Rules 1510.0050, 1510.0060, 1510.0070, 1510.0080, 1510.0090 and 1510.0100 to seed lots sampled and tested by official methods. For all seed used in Mn/DOT mixes or projects, tests for viability (including germination and TZ tests) are valid for 12 months from the test date, exclusive of the month the test was completed. Seed shall be installed while tests are still valid.

All legume seed, including native legumes, shall have been pre-inoculated with the proper bacterial culture for the species being inoculated and with the bacteria culture designed for this purpose (pre-inoculation), in the manner and within the time specified by the manufacturer.

A1 Labeling

Contractor shall supply seed that is labeled according to the labeling requirements for agricultural seed as set forth in the Minnesota Seed Law, section 21.82. The contractor shall supply seed that also contains the following information:

a) County of genetic origin for each native component (List at least two counties for germplasm comprising accessions from multiple counties)
b) PLS percent for each mix component (Purity x Total Germination and Hard or Dormant Seed/100) for each mix component **(For PLS component of mix's)**
c) Total PLS weight for the bag. The tag shall identify this as the pay item. **(For PLS component of mix's)**
d) Total bulk weight for the bag
e) Area covered by the amount of seed in the bag when applied at the rate specified for the mix
f) All information pertaining to individual components in a mix is required for all

components, including those that constitute less than 5% of the total mix.

Tags must not be hand written. If any of the above mentioned information is not included on the tag the material will be subject to specification 1503. When multiple bags are required to keep certain species or groups of species separate for the purpose of seeding those bags may be placed inside of a larger bag as long as each bag is labeled separately and the outer bag is labeled with the name of the mix.

Each package of seed must include a "Certified Vendor" tag that is issued by Mn/DOT Erosion Control unit. This will indicate that the seed has come from a Mn/DOT Approved Seed Vendor as described in 3876.3.

A2 Seed Cleaning

Contractor shall use seed that has been cleaned to an extent sufficient to allow its passage through appropriate seeding equipment. Seed of introduced species must be suitable for use in conventional seeders. Seed of native species must be suitable for use in native seed drills without plugging up the boxes, drop tubes, or planting units of the seed drills. Contractor shall not use seed that has been conditioned so much that it suffers reduced viability as a result.

A3 Substitutions

Alternate species or germplasm may only be used by requesting permission from the Office of Environmental Services Turf and Erosion Control Engineering Unit. Requests for permission must include written proof from three potential suppliers that the specified germplasm is not available. Approved substitutions will be named in a memo at the time they are approved. All currently approved substitutions will be posted on the Office of Environmental Services Erosion Control Unit website. Use of germplasm not listed herein will be considered unacceptable and will be subject to 1503.

A4 Requirements for seed of native species

Contractor shall supply and plant all seed in the 300 series mixes as pure live seed (PLS). This includes the cover crop, grass, sedge, and forb components. All seed in the cover crop component of mixes in the 300 series must be certified by the Minnesota Crop Improvement Association (MCIA) or the appropriate seed certifying agency in the seed's state of origin, if other than Minnesota.

All native seed used in mixes in the 300 series shall be certified by the Minnesota Crop Improvement Association (MCIA) in the Source Identified class. The genetic origin for this seed shall be within Minnesota or eastern North Dakota, eastern South Dakota, northern Iowa, or western Wisconsin.

Source Identified seed shall be accompanied by the appropriate quality mark documentation from the MCIA, in the form of a MCIA-labeled yellow tag or certification certificate. County of genetic origin shall be clearly identified on the seed label for all native seed. Selected class and Tested class germplasm of native species listed in Table 3876-1 located on the website of the Office of Environmental Services Erosion Control unit may be used in 100 and 200 series seed mixtures.

If a specified species or germplasm is not available, substitutions will be granted for native seed in the 300 series mixes according to the following order of preference:

1) First preference, MCIA certified Source Identified class with a genetic origin in Minnesota or eastern North Dakota, eastern South Dakota, northern Iowa, or western Wisconsin
2) Second Preference: Source Identified seed certified by a seed certifying agency other than MCIA but with a genetic origin in Minnesota or eastern North Dakota, eastern South Dakota, northern Iowa, or western Wisconsin
3) Third Preference: Certified seed of varieties/germplasm listed in Table 3876-1.
4) Fourth Preference: Wild Type from Minnesota or eastern North Dakota, eastern South Dakota, northern Iowa, or western Wisconsin. Wild type seed is defined as seed of a local or regional ecotype that has originated from remnant native stands and that has not

undergone any intentional selection process.

Mn/DOT Table 3876-1 is hereby deleted and replaced with the following:

TABLE 3876-1
NATIVE GRASSES
SEED COUNTS AND ACCEPTABLE GERMPLASM

Trade Name	Scientific Name+	Acceptable Varieties/Germplasm*	Seeds Per Pound
Big Bluestem	Andropogon gerardi	Bonilla, Bison	131,200
Sideoats Grama	*Bouteloua curtipendula*		96,000
Blue Grama	*Bouteloua gracilis*		640,000
Fringed Brome	*Bromus ciliatus*		160,000
Kalm's Brome	*Bromus kalmii*		128,000
Hairy wood chess	*Bromus purgans*		121,600
Buffalo grass	*Buchloe dactyloides*		51,200
Blue-joint grass	*Calamagrostis Canadensis*		3,360,000
Bottle Brush Sedge	*Carex comosa*		384,000
Tussock Sedge	*Carex stricta*		848,000
Fox Sedge	*Carex vulpinoidea*		1,440,000
Canada Wild Rye	*Elymus canadensis*	Mandan	67,200
Bottle brush grass	*Elymus hystrix*		75,200
Slender Wheat Grass	*Elymus trachycaulus*	Revenue	135,000
Virginia Wild Rye	*Elymus virginicus*		62,400
Western Wheat Grass	*Elytrigia smithii*		113,600
Reed Manna Grass	*Glyceria grandis*		1,280,000
Fowl Manna Grass	*Glyceria striata*		2,560,000
Common rush	*Juncus effusus*		16,000,000
June Grass	*Koeleria macrantha*		2,400,000
Switch Grass	*Panicum virgatum*	Forestburg, Dacotah	224,000
Fowl Bluegrass	*Poa palustris*		2,080,000
Canada Bluegrass	*Poa compressa*		2,400,000

TABLE 3876-1
NATIVE GRASSES
SEED COUNTS AND ACCEPTABLE GERMPLASM

Trade Name	Scientific Name+	Acceptable Varieties/Germplasm*	Seeds Per Pound
Little Bluestem	*Schizachyrium scoparium*	Itasca Germplasm	140,800
Green Bulrush	*Scirpus atrovirens*		2,240,000
Wool-grass	*Scirpus cyperinus*		2,880,000
Soft-stem Bulrush	*Scirpus validus*		496,000
Indian Grass	*Sorghastrum nutans*	Tomahawk	132,800
Prairie Cordgrass	*Spartina pectinata*	Red River Germplasm	105,600
Rough Dropseed	*Sporobolus asper*		480,000
Sand Dropseed	*Sporobolus cryptandrus*		3,200,000
Prairie Dropseed	*Sporobolus heterolepsis*		224,000
Green Needle Grass	*Stipa viridula*		120,000

* Varieties listed are approved for use in 100 and 200 series mixes. Their substitution for MCIA Source Identified seed in 300 series mixes is only allowed upon satisfaction of the requirements of 3876.2 A5. When multiple varieties are listed for a single species, they are listed in order of preference.

Delete Mn/DOT 3876.2B Requirements for Native Grasses, Sedges, Rushes (label and paragraphs) and replace with:

B ..... Requirements for Native Grasses, Sedges, and Rushes Table 3876-1

(Keep table 3876-1)

Delete Mn/DOT 3876.2E Requirements for Native Forbs (Wildflowers): (label and paragraphs) and replace with:

E ..... Requirements for Native Forbs (Wildflowers) Table 3876-4

(Keep table 3876-4)

Mixtures 260 and 270 in Mn/DOT Table 3876-5 are hereby deleted and replaced with the following:

Mixture: 260

Common Name	Bulk Rate		% of Mix Component
	kg/ha	lb/ac	
Bluegrass, Kentucky "Certified Park"	35.8	40	32.0
Bluegrass, Canada	11.2	12.5	10.0
Bluegrass, Kentucky - Low Maintenance[1]	33.6	37.5	30.0
Fescue, hard	9.0	10	8.0
Rye-grass, perennial	22.4	25	20.0
GRAND TOTALS:	**112**	**125**	**100.0**

[1] Any accepted low maintenance Kentucky Bluegrass Except "Park"
Purpose: Commercial Turf

Mixture: 270			
Common Name	**Bulk Rate**		**% of Mix Component**
	kg/ac	**lb/ac**	
Bluegrass, Kentucky - Elite	33.6	37.5	25.0
Bluegrass, Kentucky - Improved	33.6	37.5	25.0
Bluegrass, Kentucky - Low Maintenance	33.6	37.5	25.0
Red fescue, creeping	10.8	12	8.0
Rye-grass, perennial	22.8	25.5	17.0
GRAND TOTALS:	**134.4**	**150**	**100.0**

Purpose: Residential Turf

The 300 series mixes from Mn/DOT Table 3876-5 are hereby deleted and replaced with the following:

Table 3876-5

Mixture: 310			
Common Name	**PLS Rate**		**% of Mix Component**
	kg/ha	**lb/ac**	
Bluestem, big	2.8	2.5	25.0
Indian grass	2.8	2.5	25.0
Wild-rye, Virginia	2.2	2.0	20.0
Switch grass	0.6	0.5	5.0
Blue-joint grass	0.3	0.25	2.5
Green bulrush	0.3	0.25	2.5
Wool grass	0.3	0.25	2.5
Giant bur reed	0.3	0.25	2.5
Cordgrass, prairie	1.7	1.5	15.0
Grass Totals:	**11.3**	**10.0**	**100.0**
	kg/ha	**lb/ac**	
Winter Wheat*	62.7	56.0	80.0
Rye-grass, annual	12.5	11.2	16.0
Wheatgrass, slender	3.1	2.8	4.0
Cover Crop Totals:	**78.3**	**70**	**100.0**
Wet Forbs Mixture (Table 3876-6)	**2.2**	**2.0**	**100.0**
GRAND TOTALS:	**91.8**	**82.0**	**100.0**
*Oats to be substituted for spring plantings			
Purpose: Native mix for wetter areas. Infiltration ponds, dry ponds, wet ditches. Tall height.			

Mixture: 325			
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Bluestem, big	1.7	1.5	15.0
Fringed brome	1.7	1.5	15.0
Wheat grass, slender	1.7	1.5	15.0
Virginia wild-rye	1.7	1.5	15.0
Switch grass	0.6	0.5	5.0
Fowl bluegrass	1.7	1.5	15.0
Indian grass	1.7	1.5	15.0
Prairie cord grass	0.6	0.5	5.0
Grass Totals:	**11.4**	**10.0**	**100.0**
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Blue-joint grass	0.22	0.2	10.0
Bottlebrush sedge	0.34	0.3	15.0
Tussock sedge	0.22	0.2	10.0
Fox sedge	0.22	0.2	10.0
Reed manna grass	0.22	0.2	10.0
Fowl manna grass	0.22	0.2	10.0
Green bulrush	0.22	0.2	10.0
Wool grass	0.22	0.2	10.0
Soft-stem bulrush	0.34	0.3	15.0
Sedge Totals:	**2.22**	**2.0**	**100.0**
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Winter Wheat*	61.6	56	80.0
Rye-grass, annual	12.3	11.2	16.0
Wheatgrass, slender	3.1	2.8	4.0
Cover Crop Totals:	**77**	**70**	**100.0**
Wet Forbs Mixture (Table 3876-6)	**2.2**	**2.0**	**100.0**
GRAND TOTALS:	**92.8**	**84.0**	**100.0**
*Oats to be substituted for spring plantings			
Purpose: Native sedge/prairie meadow mix. Reaches a height of 915 mm to 1220 mm (36 to 48 inches). Developed for use on hydric soils and for wetland restoration.			

Mixture: 328			
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Bluestem, big	2.2	2	12.5
Brome, fringed	2.2	2	12.5
Wild-rye, Virginia	4.4	4	25.0
Switchgrass	1.1	1	6.3
Bluegrass, fowl	5.5	5	31.2
Indian grass	2.2	2	12.5
Grass Totals:	**17.6**	**16.0**	**100.0**
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Winter Wheat*	61.6	56.0	80.0
Rye-grass, annual	12.3	11.2	16.0
Wheatgrass, slender	3.1	2.8	4.0
Cover Crop Totals:	**77**	**70**	**100.0**
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Milkweed, marsh	0.33	0.3	15.0
Prairie clover, purple	0.33	0.3	15.0
Tic-trefoil, showy	0.33	0.3	15.0
Sunflower, early	0.33	0.3	15.0
Black-eyed Susan	0.55	0.5	25.0
Vervain, blue	0.33	0.3	15.0
Economy Forbs Totals:	**2.2**	**2.0**	**100.0**
GRAND TOTALS:	**96.8**	**88.0**	**100.0**
*Oats to be substituted for spring plantings			
Purpose: Native mix for infiltration ponds, dry ponds, temporary wet ditches. Tall height.			

Mixture: 330			
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Grama, sideoats	3.4	3.0	21.5
Grama, blue	2.8	2.5	18.0
Bluestem, little	3.9	3.5	25.0
June grass	1.1	1.0	7.0
Dropseed, sand	1.1	1.0	7.0
Wild-rye, Canadian	3.4	3.0	21.5
Grass Totals:	**15.7**	**14.0**	**100.0**
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Winter Wheat*	62.7	56.0	80.0
Rye-grass, annual	12.5	11.2	16.0
Wheatgrass, slender	3.1	2.8	4.0
Cover Crop Totals:	**78.3**	**70**	**100.0**
Dry Forbs Mixture (Table 3876-6)	**0.6**	**0.5**	**100.0**
GRAND TOTALS:	**94.6**	**84.5**	**100.0**
*Oats to be substituted for spring plantings			
Application: Native mix for Sandy/dry areas. Short height.			

Mixture: 340			
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Bluestem, big	3.3	3.0	21.5
Bluestem, little	2.8	2.5	18.0
Wild-rye, Canadian	2.2	2.0	14.0
Grama, sideoats	2.2	2.0	14.0
Switch grass	0.6	0.5	4.0
Dropseed, sand	0.6	0.5	3.5
Bluegrass, Canada	3.4	3.0	21.5
June grass	0.6	0.5	3.5
Grass Totals:	**15.7**	**14.0**	**100.0**
	PLS Rate		% of Mix
Common Name	kg/ha	lb/ac	Component
Winter Wheat*	62.7	56.0	80.0
Rye-grass, annual	12.5	11.2	16.0
Wheatgrass, slender	3.1	2.8	4.0
Cover Crop Totals:	**78.3**	**70**	**100.0**
Dry Forbs Mixture (Table 3876-6)	**0.6**	**0.5**	**100.0**
GRAND TOTALS:	**94.6**	**84.5**	**100.0**
*Oats to be substituted for spring plantings			
Purpose: Native mix for Sandy/Dry areas. Mid-height.			

Mixture: 350			
Common Name	**PLS Rate**		**% of Mix Component**
	kg/ha	**lb/ac**	
Bluestem, big	3.4	3.0	21.5
Indian grass	2.8	2.5	18.0
Bluestem, little	2.8	2.5	18.0
Grama, sideoats	3.4	3.0	21.5
Wild-rye, Canadian	2.2	2.0	14.0
Switch grass	1.1	1.0	7.0
Grass Totals:	**15.7**	**14.0**	**100.0**
Common Name	**PLS Rate**		**% of Mix Component**
	kg/ha	**lb/ac**	
Winter Wheat*	62.7	56.0	80.0
Rye-grass, annual	12.5	11.2	16.0
Wheatgrass, slender	3.1	2.8	4.0
Cover Crop Totals:	**78.3**	**70**	**100.0**
Mesic Forbs Mixture (Table 3876-6)	**0.6**	**0.5**	**100.0**
GRAND TOTALS:	**94.6**	**84.5**	**100.0**
*Oats to be substituted for spring plantings			
Application: Native mix for general roadside areas.			

Mn/DOT Table 3876-6 is hereby deleted and replaced with the following:

Table 3876-6

Mixture: Mesic Forbs		
Common Name	**Botanical Name**	**% of Mix**
Aster, smooth-blue	*Aster laevis*	5.0
Milkvetch, Canada	*Astragalus canadensis*	5.0
Prairie clover, white	*Dalea candidum*	5.0
Prairie clover, purple	*Dalea purpureum*	5.0
Tick-trefoil. Showy	*Desmodium canadense*	5.0
Coneflower, narrow-leaved	*Echinacea angustifolia*	5.0
Ox-eye, common	*Heliopsis helianthoides*	5.0
Coneflower, grey-headed	*Ratibida pinnata*	5.0
Blazingstar, rough	*Liatris aspera*	5.0
Blazingstar, tall	*Liatris pycnostachya*	5.0
Bergamot, wild	*Monarda fistulosa*	5.0

Penstemon, showy	*Penstemon grandiflorum*	5.0
Mint, mountain	*Pycnathemum virginianum*	5.0
Coneflower, columnar	*Ratibida columnifera*	5.0
Black-eyed Susan	*Rudbeckia hirta*	5.0
Goldenrod, stiff	*Solidago rigida*	5.0
Vervain, blue	*Verbena hastata*	5.0
Vervain, hoary	*Verbena stricta*	5.0
Alexanders, heart-leaved	*Zizea aptera*	5.0
Alexanders, golden	*Zizia aurea*	5.0
	Total:	**100.0**
Rate: 0.6 kg/ha (½ pounds per acre) PLS.		

Mixture: Dry Forbs		
Common Name	**Botanical Name**	**% of Mix**
Leadplant	*Amorpha canescens*	10.0
Milkweed, butterfly	*Asclepias tuberosa*	2.0
Aster, heath	*Aster ericoides*	4.0
Tic-seed, stiff	*Coreopsis palmate*	2.0
Yarrow	*Achillea millefolium*	2.0
Long-leaved bluets	*Hedyotis longifolia*	1.0
Bushclover, round-headed	*Lespedeza capitata*	3.0
Blazingstar, rough	*Liatris aspera*	4.0
Blazingstar, dotted	*Liatris punctata*	3.0
Lupine, wild	*Lupinus perennis*	5.0
Prairie clover, white	*Dalea candidum*	5.0
Prairie clover, purple	*Dalea purpureum*	16.0
Prairie rose	*Rosa arkansana*	1.0
Black-eyed susan	*Rudbeckia hirta*	18.0
Goldenrod, gray	*Solidago nemoralis*	3.0
Goldenrod, upland	*Solidago ptarmicoides*	1.0
Goldenrod, stiff	*Solidago rigida*	2.0
Goldenrod, showy	*Solidago speciosa*	2.0
Vervain, hoary	*Verbena stricta*	14.0
Alexander's,golden	*Zizea aurea*	2.0
	Total:	**100.0**
Rate: 0.6 kg/ha (½ pounds per acre) PLS		

Mixture: Wet Forbs		
Common Name	**Botanical Name**	**% of Mix**
Hyssop, fragrant giant	*Agastache foeniculum*	2.0
Water plantain	*Alisma subcordatum*	4.0
Meadow garlic	*Allium canadense*	1.0
Anemone, Canada	*Anemone Canadensis*	1.0
Milkweed, marsh	*Asclepias incarnata*	2.0
Aster, panicled	*Aster simplex*	3.0
Aster, New England	*Aster novaeangliae*	3.0
Aster, red-stalked	*Aster puniceus*	3.0
Aster, flat-topped	*Aster umbellatus*	1.0
Tick trefoil, Canada	*Desmodium glutinosum*	1.0
Joe-pye weed	*Eupatorium maculatum*	17.0
Boneset	*Eupatorium perfoliatum*	10.0
Goldenrod, grass-leaved	*Solidago graminifolia*	2.0
Sneezeweed	*Helenium autumnale*	1.0
Giant sunflower	*Helianthus giganteus*	2.0
Ox-eye, common	*Heliopsis helianthoides*	1.0
Great St. John's wort	*Hypericum pyvamidatum*	2.0
Iris, wild	*Iris versicolor*	1.0
Blazingstar, tall	*Liatris pycnostachya*	8.0
Bergamot, wild	*Monarda fistulosa*	1.0
Prairie clover, white	*Dalea candidum*	1.0
Prairie clover, purple	*Dalea purpureum*	2.0
Mountain mint	*Pycnathemum virginianum*	1.0
Black-eyed susan	*Rudbeckia hirta*	6.0
Goldenrod, stiff	*Solidago rigida*	2.0
Tall meadow rue	*Thalictrum dasycarpum*	2.0
Vervain, blue	*Verbena hastata*	14.0
Ironweed	*Veronia fasciculate*	1.0
Culver's root	*Veronicastrum virginicum*	3.0
Alexander's, golden	*Zizea aurea*	2.0
	Total:	**100.0**
Rate: 2.2 kg/ha (2 pounds/acre) PLS		

(3889) TEMPORARY DITCH CHECKS

The provisions of Mn/DOT 3889 are supplemented and/or modified with the following:

Mn/DOT 3889.2B Type 2: Bioroll, is revised to read as follows:

Type 2 ditch checks shall consist of 3897 Filter Log Type; Straw Bioroll or Wood Fiber Bioroll.

Mn/DOT 3889.2C Type 3: Bioroll Blanket System, is revised to read as follows:

Type 3 ditch checks shall consist of two components; Filter Log Type; Straw Bioroll or Wood Fiber Bioroll in accordance with 3897, staked on top of a Category 3, specification 3885 erosion control blanket. The blanket shall form a minimum width of 3.7 m **(12 feet)** perpendicular to the ditch gradient.

INDEX TO DIVISION SB

DIVISION SB

BRIDGE PLANS

The plans for this Project, consisting of the sheets tabulated below, were approved by the State Bridge Engineer.

BRIDGE NO.	TOTAL SHEETS	SHEET NO.	DATE OF APPROVAL
07547	16	B1-B16	
07557	21	B1-B21	
07592	26	B1-B26	
07593	16	B1-B16	

New or revised sheets were approved as listed below:

BRIDGE NO.	SHEET NO.	DATE OF APPROVAL

I hereby certify that the Special Provisions for bridge construction (Division SB) contained in this Proposal were prepared by me or under my direct supervision, and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

(Jeff A Johnson, PE)

Date: 2/2/2010 Lic. No. 17280

SB-1 (1706) EMPLOYEE HEALTH AND WELFARE

The provisions of Mn/DOT 1706 are supplemented as follows:

The Contractor shall submit a plan, at the preconstruction conference, for providing all OSHA required safety equipment (safety nets, static lines, false decks, etc.) for all work areas whose working surface is 1.8 meters (**6 feet**) or more above the ground, water, or other surfaces. Submittal of this plan will in no way relieve the Contractor of his/her responsibility for providing a safe working area.

All safety equipment, in accordance with the Contractor's plan, must be inplace and operable in adequate time to allow Mn/DOT personnel to perform their required inspection duties at the appropriate time. No concrete shall be placed in any areas affected by such required inspection until the inspection has been completed.

The installation of safety lines, safety nets, or other systems whose purpose is to reduce the hazards of bridge work may require the attachment of anchorage devices to beams, girders, diaphragms, bracing or other components of the structure. Clamp type anchorage systems which do not require modification of structural members may be used provided they do not interfere with proper execution of the work; however, if the Contractor desires to use an anchorage system which requires modification of structural members, s/he shall request approval, in writing, for plan modification as provided in Mn/DOT Specifications. Requests to install systems which require field welding or drilling of primary stress carrying members of a bridge will not be approved. The Contractor shall indicate any portions of anchorage devices which will remain permanently in the structure.

On both ends of each pier cap extending 1.8 meters (**6 feet**) or more above the ground, the Contractor shall install an insert or other suitable anchorage to which safety lines can be attached. Any portion of said device extending outside the finished lines of the pier cap shall be removed unless otherwise approved by the Engineer. Any void or cavity resulting from the installation or removal of this device shall be repaired or sealed to prevent the ponding or entry of water as directed by the Engineer.

Approved anchorage systems shall be furnished, installed, and removed at no increased cost to the State for materials, fabrication, erection, or removal of the bridge component or anchorage system.

The Contractor is hereby notified that paint systems on Bridge No. contain lead. Precautions to protect worker health and safety may be necessary if operations by the Contractor result in removal or detachment of paint from metal surfaces.

SB-2 (1717) AIR, LAND AND WATER POLLUTION

The provisions of 1717 are supplemented as follows:

The Contractor's attention is hereby directed to MPCA Rule 7011.0150 as it relates to sandblasting and/or concrete removal operations (http://www.pca.state.mn.us/index.cfm).

SB-3 **(2104) REMOVAL OF ASBESTOS AND REGULATED WASTE (BRIDGE)**

This work shall consist of the removal and disposal of any regulated waste found on existing bridges or from the utilities located on the bridge, in accordance with the applicable Mn/DOT Standard Specifications and the following:

SB-3.1 If during the course of removal or renovation of utility or bridge, additional asbestos materials or regulated wastes, other than that noted in the Assessment Summary are encountered, the Contractor shall notify the Mn/DOT Project Engineer who shall suspend work and the Contractor shall furnish a documented inspection and evaluation by a Mn/DOT approved certified MDH contractor prior to the resumption of work. The work, as outlined in this paragraph, will be paid for as Extra Work.

SB-3.2 All asbestos and/or regulated waste shall be disposed of in accordance with Mn/DOT's manual. Only those listed in this manual as pre-approved for asbestos and/or regulated waste will be allowed to work on this Project. The Contractor's shall use Mn/DOT approved companies for testing, waste transport and disposal as provided and described in Mn/DOT's manual "*Asbestos and Regulated Waste Manual For Structure Demolition Or Relocations for Construction Projects*" available on the following website: http://www.dot.state.mn.us/environment/regulated-materials/index.html. Contact Mark Vogel, Mn/DOT Office of Environmental Services, 651-366-3630 with any questions regarding the manual.

SB-3.3 All material shall be removed, identified, and disposed of in accordance with Section S-1701 (LAWS TO BE OBSERVED (BRIDGE)) of these Special Provisions. The Contractor will not receive permission to begin the regulated waste removals, with the exception of material needed for hazardous and regulated waste assessment or testing, until the Engineer has copies of all required notices.

SB-3.4 The Contractor will not be allowed to proceed with the demolition or renovation of bridges until the Engineer has received copies of all required notifications as indicated in Section S-1701 (LAWS TO BE OBSERVED (BRIDGE)) of these Special Provisions.

The Contractor shall be responsible to notify any utility owners at least three (3) days prior to the removal of any regulated waste which may affect the utility allowing the utility owner time to have a representative on site.

SB-3.5 See the attached "Asbestos and Regulated Waste Assessment Summary" for information on whether or not asbestos or regulated waste was detected in the bridge(s) to be removed or renovated.

The assessment summary included with the Plan or Special Provisions are intended for informational purposes. Quantity, type and analysis of any asbestos or regulated waste containing material are estimates intended as a general guide.

SB-3.6 No measurement will be made of any portion of the asbestos or regulated waste material removal, but the complete removal thereof as specified shall be construed to be incidental to the single lump sum for which payment is made under Item 2442.501 (Remove Existing Bridge).

SB-4 (2401) CONCRETE BRIDGE CONSTRUCTION

The provisions of Mn/DOT 2401 are modified and/or supplemented with the following:

Delete the first sentence of the first paragraph of 2401.3G:

Cure newly placed concrete by providing protection against rapid loss of moisture, freezing temperatures, high temperatures, abrupt temperature changes, vibration exceeding a normal or reasonable limit as described in the Bridge Construction Manual chapter .362, shock waves, and prematurely applied loads.

Add the following to the end of the second paragraph of 2401.3G:

All sections not included in superstructures.....45

SB-4.1 Concrete Aggregate for Bridges

The provisions of 2401.2A shall apply except as modified herein:

Delete the second paragraph of 2401.2A and substitute the following therefor:

Class A Coarse Aggregate, as defined in 3137.2B, shall be used in all concrete for bridge superstructures, except that coarse aggregate requirements for precast concrete members fabricated under 2405 shall be as specified in 2461.2D

SB-4.2 Joint Filler and Sealing

The provisions of 2401.3J1 are supplemented as follows:

Prior to installation of sealing materials, concrete curing shall be completed. A minimum of 7 days drying is required prior to application of sealers. Sawcut joints shall be sandblasted, blown clean, and the concrete surfaces shall be dry at the time sealer is installed.

Preformed joint shall be as detailed in the Plans and in conformance with the following requirements.

1. Bituminous felt shall comply with AASHTO M33, modified to the extent that the load required to compress the test specimen to 50 percent of its thickness before test shall be not more than 8274 kPa (**1200 psi**).

2. Cork shall comply with Mn/DOT 3702 and AASHTO M153 Type II.

3. Polystyrene shall comply with the following:

Type	Minimum Compressive Strength (5 percent deflection)	Characteristics
A	207 kPa (**30 psi**)	Closed Cell Expanded Polystyrene
B	69 kPa (**10 psi**)	Molded Polystyrene

Testing for compressive strength of polystyrene shall be in accordance with ASTM D 1621. The Contractor shall, if requested by the Engineer, furnish evidence that the material meets these requirements.

The quantity of preformed cork joint filler material given in the Plans is for the Contractor's convenience only. Any additional joint filler required shall be furnished by the Contractor with no additional compensation.

SB-4.3 Curing Bridge Deck Slab

Delete the first sentence of the 12th paragraph of 2401.3G and substitute the following:

After completion of the tine texturing for bridge deck slab and after free water has disappeared from the surface, the Contractor shall apply a membrane curing compound meeting the requirements of Mn/DOT specification 3754, section B (Requirements for Concrete Pavement Membrane Curing Compound). The curing compound shall be applied with approved power-operated spray equipment. The Contractor shall place the membrane cure material homogeneously to provide a uniform solid white opaque coverage on all exposed concrete surfaces (equal to a white sheet of paper). The membrane cure shall be placed within 30 minutes of concrete placement unless otherwise directed by the Engineer. Failure to comply with this provision will result in a price reduction for the concrete item involved in accordance with Mn/DOT Spec. 1503. The curing compound is not a substitute for the cure specified below, but is required for moisture retention until the conventional wet curing material can be placed. Conventional wet curing shall be applied as soon as the concrete can be walked on with insignificant damage. The deck slab surface shall be kept continuously wet with clean fresh water for an initial curing period of at least 7 days. The Contractor must provide adequate personnel to ensure that the deck surface is maintained in a wet condition on weekends and/or holidays.

Delete the entire section of 2401.3K.

SB-4.4 Integral Concrete Diaphragms

Place all integral diaphragms to the elevation of the bottom of the bridge slab prior to placing any slab concrete. Use an approved chemical retarder from the "Approved/Qualified Product List for Concrete Products, "Concrete Admixtures A-G" (http://www.dot.state.mn.us/products) in the concrete for integral concrete diaphragms. Adjust the retarder dosage so the integral diaphragm concrete remains in an unhardened state during placement of the entire bridge slab.

SB-4.5 Finish of Concrete Surfaces

Cure concrete for a minimum of 28 days or as recommended by the manufacturer prior to applying special surface finish (SSF) or acrylic paint. Thoroughly flush all surfaces that are to receive SSF with clean water not more than 24 hours before commencing with the SSF finishing.

A. Special Surface Finish

The provisions of 2401.3F2c apply except as modified herein:

Apply SSF on the exposed concrete surfaces as designated below for Bridge No.(s). 07589.

1. Outside surfaces of barrier railing
Wingwalls
Copings
Edges of slabs
Bottom of overhangs
Abutments
Piers/pier cap

Provide a finish color for all SSF matching Federal Standard "Pearl Grey" Provide paint free of toxic metals and toxic pigments.

Provide a test area, 1 meter x 1 meter (3 foot x 3 foot), for final color selection and have the Engineer approve the test area after the color has been added to it.

Add the following sentence after the fourth sentence in the second paragraph of 2401.3F2c:

Furnish only one approved system of mortar, bonding agent, water, and 100 percent acrylic paint (meeting MnDOT 3584) from the "Approved/Qualified Product Lists of Special Surface Finish" (http://www.dot.state.mn.us/products/index.html) to produce the color(s) specified in this special provision.

SB-5 (2402) STEEL BRIDGE CONSTRUCTION

This work shall be performed in accordance with the provisions of Mn/DOT 2402

except as modified below:

Delete the first paragraph of 2402.3D and substitute the following:

At least six weeks before starting construction of the structural steel erection falsework, the Contractor shall supply the Engineer with three copies of the detailed Plans and Specifications and two copies of the associated calculations of the proposed system for constructing the falsework. Design of the falsework shall be in accordance with AASHTO "Guide Design Specifications for Bridge Temporary Works". The Plans and Specifications shall be prepared by an Engineer, thoroughly checked by a second Engineer for completeness and accuracy, and certified by one of the aforementioned professional Engineers licensed in the State of Minnesota. The documents shall include sufficient details so that construction of the proposed system can be completed solely by reference to the Plans and Specifications. The design criteria shall be shown on the first sheet of the Plans.

Delete the first paragraph of 2402.3F and substitute the following:

Structural steel members shall be erected in a manner that will provide safety to the workers, inspectors, and the public, at all times, as well as reasonable assurance against damage to the steel members. Prior to placement of diaphragms, the primary members, such as beams and girders, shall be temporarily anchored, braced, and stabilized as they are erected so as to preclude sliding, tipping, buckling, or other movement that may otherwise occur.

If active vehicular or railroad traffic will be permitted to travel beneath beams prior to complete erection of all the beams and diaphragms in a span, the Contractor shall submit an erection plan prepared by an engineer, thoroughly checked by a second engineer for completeness and accuracy, and certified by one of the aforementioned professional engineers licensed in the State of Minnesota which details all temporary works necessary to brace and stabilize beams. Struts, bracing, tie cables, and other devices used for temporary restraint shall be of a size and strength that will ensure their adequacy. Plans shall specify the required bolt tension and number of bolts to be installed in permanent diaphragm connections and in other bracing necessary to stabilize the beams. The Contractor shall arrange the work schedule so that at least two adjacent girders will be erected (including diaphragms and bolts fully tightened) and braced in any one span before operations are suspended for the day.

The last sentence of 2402.3F, paragraph (3), is hereby modified to read as follows:

Connections for primary members, diaphragms, and other secondary members shall have a sufficient number of holes filled with erection pins and bolts so that the plates are drawn into full contact and so that the holes are properly matched prior to placing the permanent connectors.

SB-5.1 Metal Railing

This work shall consist of furnishing, coating, and installing metal railing, including all anchorages and fittings, in accordance with the applicable provisions of 2402, 2433,

2471, 2478, the Plans and the following. The contractor is responsible for communicating all applicable specifications, special provisions and requirements to all subcontractors.

A. Engineer

Engineer, as used herein, when relating to shop fabrication and coatings, shall mean the Departments Bridge Construction and Maintenance Engineer.

B. Materials

All materials shall be in accordance with the Plan details. If not specified, all steel shall comply with 3306, except that pipe and pipe sleeves shall comply with 3362. Threaded rods, bolts, nuts, and washers shall meet 3391 and shall be galvanized in accordance with 3392 or electroplated in accordance with ASTM B 633, Type III, SC 4.

C. Fabrication and Inspection Requirements

All metal railing shall be fabricated in accordance with 2471 and the Plan. The welding code shall be AWS D1.1-Structural Welding Code-Steel. Welding Procedure Specifications (WPSs) shall be submitted to the Engineer, for approval, prior to the start of fabrication.

Prior to fabrication the Contractor shall submit a Quality Control Plan (QCP) and fabrication drawings that are acceptable to the Engineer. Any work started prior to receiving approved drawings WPSs, and a QCP, shall be subject to 1512. The Contractor shall also give the Engineer at least 5 working days notice prior to beginning work so that Quality Assurance (QA) inspection may be provided.

All metal railing will be inspected by the Engineer. The purpose of the inspection(s) is to establish compliance with the Contract Documents. The shop inspection(s) is not intended to supplement or replace the Contractor's own Quality Control (QC). The Contractor is ultimately responsible for the correction of errors and faulty workmanship or for the replacement of nonconforming materials.

All parts of the fabrication are to be visually inspected and the inspections are to be documented by the Contractor's QC personnel. Any Nondestructive Testing required by the Contract Documents shall be performed and documented by an ASNT-TC-1A Level II qualified inspector.

Parts found to be in nonconformance shall be documented by using a Nonconformance Report form (NCR). The NCR shall describe in detail the fabrication error and the proposed repair procedure(s) in accordance with the QCP. Repair(s) performed shall be subject to the written approval of the Engineer.

D. Coating Requirements

All railing material shall be galvanized in accordance with 3394 after fabrication

Pre-Galvanized Procedure(s):

1. Calibrate dry film thickness gages in accordance with SSPC-PA 2-Measurement of Dry Coating Thickness with Magnetic Gauges.

2. Prepare all fabricated material surfaces by abrasive blast cleaning to a minimum of SSPC-SP 6/NACE No. 3-Commercial Blast Cleaning, prior to galvanizing.

3. Purchase Order(s) shall inform the galvanizer as to which specific items are going to be duplex coated so that they may comply with any additional cleaning required to meet the "Post Galvanizing Procedures", and, as necessary, meet the visual requirements of aesthetic, ornamental products. The galvanizer shall also be informed which materials, to be galvanized, are reactive (e.g. 3309, etc.).

Galvanizing Procedure(s):

1. All metal railing to be galvanized will be processed utilizing a "dry" kettle. The metal railing shall be prefluxed prior to the galvanizing bath using an aqueous tank of zinc chloride/ammonium chloride. The use of a "top flux" blanket on the molten zinc bath will not be permitted.

2. Air cool the metal railing to ambient temperature before handling for shipment and/or storage. Do not quench the metal railing or apply any post-galvanizing treatments.

3. Lumps, projections, globules, or heavy deposits of zinc, which will interfere with the "intended use of the product", will not be permitted. Damage to the galvanized zinc coating resulting in uncoated "black" and/or bare areas, blisters, flux deposits, and dross inclusions will also be considered unacceptable. Galvanized material that does not meet the requirements of 3394, shall be repaired in accordance with the methods described in ASTM A780. Required repair(s) may be subject to written approval of the Engineer. "Intended use of the product" shall be defined as surface conditions that, when painted, will produce acceptable aesthetic and/or visual qualities.

4. Galvanized metal railing shall be stored in a manner that will prevent the formation of "white-rust" or wet storage painting. "White rust" or staining of the galvanizing is not acceptable. A written repair procedure shall be subject to the approval of the Engineer. All repairs shall be performed at no expense to the owner.

5. The galvanizer shall provide the Engineer with all galvanizing process-related Quality Control documents prior to shipment of the galvanized product. These documents shall include the following: coating material certifications, visual examinations, and coating thickness examinations.

6. The galvanized metal railing shall have a straightness tolerance of 3 mm in 3000 mm (**1/8 inch in 10 ft**), prior to any subsequent paint applications. Any galvanized metal railing not meeting this tolerance shall be straightened.

7. It is the galvanizer's responsibility to provide the Engineer with advanced notification of at least 5 working days of intent to ship so that the Engineer can perform a Quality Assurance audit.

Handling and Shipping of Coated Metal Railing:

All completed, fabricated, and coated metal railing shall be protected during handling, and shipping, to prevent any damage to the coating(s). Coated metal railing shall not be moved or handled until the coating has cured, but in no case sooner than recommended by the coating manufacturer.

Metal railing may be padded to protect it from direct contact with wood, steel, or other packaging materials that could scratch, mar or otherwise damage the final coated railing finish. Softeners may be used in conjunction with high-density foam or other acceptable packaging materials at all points of contact.

Storage of Coated Metal Railings:

All completed coated metal railing shall be stored in accordance with 1606 and the following:

1. All railing shall be clearly tagged/piece marked by the fabricator prior to final storage. Identification markings shall include, as a minimum: individual piece marks, bridge and/or project number(s), fabricator and applicator job numbers. All marking(s) shall not be visible to the public when the railing is in its installed position. The method of identification shall be included in the fabricators QCP.

2. It is the Contractors responsibility to provide the Engineer with advance notification of at least 5 working days of intent to ship, so that the Engineer can perform a QA audit prior to shipping.

E. Construction Requirements

The steel posts shall be adjusted to obtain the grade and alignment as shown in the Plans by one of the following methods:

1. The steel posts shall be shimmed with steel shims or washers to the proper grade and alignment, not to exceed 6 mm (**1/4 inch**) of shim height. Before attaching the nuts, coat the surface between the base plate and concrete rail with an approved silicone caulk. Tighten the anchor rod nuts (as per section "C"-Anchorages) and neatly smooth the caulk around the perimeter of the railpost base plate.

2. The anchor rods shall have leveling nuts threaded on them and turned down to the base of the anchor rods. The rails shall be installed and the steel posts set to the proper grade and alignment by adjusting the leveling nuts. Install the top nuts and tighten them firmly to the base plate. The space between the base plate and the concrete shall be filled and neatly finished with grout that is approved by the Engineer.

F. Repairs of Coated Steel Railings:

Any damaged coated surfaces, identified through either Quality Control or Quality Assurance inspections as being unacceptable after shipping and handling, shall be subject to the provisions of 1512.

SB-6 **(2405) PRESTRESSED CONCRETE BEAMS**

The provisions of Mn/DOT 2405 are modified and/or supplemented with the following:

Delete the first paragraph of 2405.3M and substitute the following:

Prestressed concrete beams shall be erected in a manner that will provide safety to the workers, inspectors, and the public, at all times, as well as reasonable assurance against damage to the prestressed members. Prior to the placement of diaphragms, the prestressed beams shall be temporarily anchored, braced, and stabilized as they are erected so as to preclude sliding, tipping, buckling, or other movement that may otherwise occur. If active vehicular or railroad traffic will be permitted to travel beneath beams prior to complete erection of all the beams and diaphragms in a span, the Contractor shall submit an erection plan prepared by an engineer, thoroughly checked by a second engineer for completeness and accuracy, and certified by one of the aforementioned professional engineers licensed in the State of Minnesota which details all temporary works necessary to brace and stabilize beams. Struts, bracing, tie cables, and other devices used for temporary restraint shall be of a size and strength that will ensure their adequacy. The Contractor shall arrange the work schedule so that each beam will be connected to an adjacent beam and at least two adjacent girders will be erected (including diaphragms and bolts fully tightened) and braced and stabilized in any one span before operations are suspended for the day.

SB-6.1 Prestressed Concrete Fabricator Certification

The Fabricator's quality control office shall maintain documentation containing the data required by the specifications and the State Materials Engineer. This documentation shall contain test data and measurements taken at times and locations approved by the Engineer, assuring that monitoring, by personnel not directly involved in production, is sufficient to ensure compliance with approved procedures.

If the Engineer's review of fabrication work discloses that approved procedures are not being followed, the Fabricator shall immediately correct the procedure.

The Engineer will determine what additional testing work must be done by the

Fabricator or, if necessary, what part of the work must be repaired or replaced if fabrication work is not properly monitored and documented by the Fabricator.

Any and all costs of required additional monitoring and testing shall be at the expense of the Contractor with no additional compensation.

SB-6.2 Steel Intermediate Diaphragms

In lieu of providing the steel intermediate diaphragm shown in detail B403 of the plans, the Contractor may substitute a bent plate diaphragm. The bent plate diaphragm shall be made of 8 mm (**5/16"**) thickness plate bent as shown in detail B402 of Mn/DOT Bridge Details Manual. The minimum depth for diaphragm shall be dimension "C" shown in B403; minimum flange width shall be 125 mm (**5"**).

SB-6.3 Concrete Finish of Exterior Beams

Delete the eighth paragraph of 2405.3M and substitute the following:

A special surface finish on the outer surface of the exterior beams is not required on this bridge

SB-6.4 Prestress Transfer

Monitor the ends of the rectangular prestressed concrete beam during the strand release process. If during the release of the individual prestressing strands cracks occur in the ends of the beam the following release sequence will be required.

Delete the first sentence of the second paragraph of 2405.3H.

Add the following to 2405.3H:

Conduct prestress transfer in a sequential and alternating manner symmetrical to the vertical axis of the beam in order to minimize the lateral eccentricity of the prestress forces and diminish cracking of the concrete. Release individual prestressing strands in the following sequence:

Beginning with the bottom row of strands, proceed to the outermost strands in this row and release one strand each side of center. Move up one row, to the outermost strands in this row and release one strand each side of center. Move to the top row at the top of the beam, to the outermost strands and release one strand each side of center. Move to the second row from the top of the beam to the outermost strands and release one strand each side of center. Proceed to the bottom row of strands at the bottom of the beam, 3 columns from the vertical axis, and release one strand each side of center. Move up one row in the same column and release one strand each side of center. Then proceed to the innermost strands in the bottom row and release one strand each side of center. Move up one row and release the same strands. Proceed to the innermost strands in the top row at the top of the beam and release one strand each side of center. Proceed to the bottom row, 1 column in from the outmost strands and release one strand each side of center. Move up one row and release the same strands. Proceed to the bottom row, 2 columns out from the vertical axis of the beam and release one strand each side of center. Move up one row and release the same strands.

Once release has started, all strands of that beam shall be released in the sequence described above even if cracking is noticed near the end of the beam. Notify the Engineer immediately of any cracking and no other beams with the same strand pattern may be fabricated until the Engineer has approved a revised release sequence.

SB-6.5 Prestressed Concrete Box Beams

A. Description

This special provision describes fabricating, furnishing, transporting, and placing grout between box beams and grout in post tensioning ducts of box type prestressed beams, in accordance with sections 2401 and 2405 of the standard specifications, as directed by the engineer, and as hereinafter provided.

B. Materials

1. Concrete for box beams

Concrete for the box beams shall be in accordance with sections 2401 and 2405, mix 3W36, except that the concrete shall be air entrained at 8% ±1.5%. To reduce permeability the concrete mix, it is also required to contain fly ash with the amount of Portland cement replaced with fly ash shall be in a range of 20 to 25 percent. Modifications to mix design 3W36 will be required to obtain the air entrainment and fly ash requirements and to meet the design strength specified in the plans. A modified mix design shall be submitted to the engineer for approval.

2. Void fill material for box beam shall be extruded polystyrene insulation. The maximum water absorption shall 0.1%, by volume, in accordance with ASTM D2842.

3. Grout between the Post-tensioned Beams and in the Anchor Dowel holes
Use one of the following mixes, proportioned by weight for the grout between the post-tensioned beams:

Mix 1

Component	Quantity (pounds per cubic yard)
Type 1 Portland Cement	468
Type N Masonry Cement	349
Fine Aggregate	1991
Net Water (approx.)	415

Mix 2

Component	Quantity (pounds per cubic yard)
Type 1 Portland Cement	930
Fine Aggregate	1966
Net Water (approx.)	415

Provide an entrained air content in the mix of 14% +/- 4% by using masonry cement or a department-approved air entraining admixture.

Add water if necessary, to obtain a consistency that ensures that the space between beams is completely filled.

4. Grout in the Post-tensioned Ducts
Use a grout composition of 94 pounds of Type 1 cement, 5 gallons of water and 1 pound of approved plasticizer or a pre-mixed packaged grout that is approved by the engineer, in the post-tensioned ducts.

5. Grout in the Stress Pockets
Proportion by weight the cement, fine aggregate, and non-shrink admixture for the grout in the stress pockets, as indicated in the following table. Use Type 1 cement. Add water as necessary to obtain a 3-inch maximum slump. Furnish a metallic aggregate non-shrink admixture such as Embeco, Ferrolith-G, Groutex, Iso-Vol., Vibrofoil, or equal.

Cement	**Fine Aggregate**	**Non-Shrink Admixture**
188 lbs	300 lbs	100 lbs

The following non-chloride, pre-mixed commercial non-shrink grouts, placed according to the manufacturer's instructions, may be used in the stress pockets in lieu of the cement grout above. Limit slump to a 3-inch maximum.

Product	**Source**
SET Non-Shrink Grout, Cleveland, OH	Master Builders
Sonogrout, Sonneborn Building Prod. Div., Minneapolis, MN	Sonneborn-Contech

Five Star 400 Grout, Old Greenwich, CT	U.S. Grout Corporation
Sure-Grip Grout, Oregon, IL	Dayton-Superior

C. Construction

The grout is to be placed between the beams and cured for a minimum of 48 hours before the post tensioning of the transverse tendons can begin. No moving vehicle loads will be permitted on the bridge beams during the grouting or curing of the grout between the beams and until the tendons have been post tensioned. The concrete end diaphragm shall not be placed until the beams have been post tensioned.

The grout between the post-tensioned beams shall be compacted with a rod during placement of the grout to ensure that the voids are completely filled.

Pressure grout the post-tensioned ducts from one grout pipe until all entrapped air is expelled and grout begins to flow from the open grout pipe. Close the open grout pipe and maintain a pressure of 50 psi for 15 seconds.

The stress pockets at the ends of the tendons shall be grouted after post tensioning. A bonding agent shall be used to prepare the surface. The grout shall fill the pocket and be finished flush with the face of the beam.

D. Measurement

No direct measurement will be made of this item. Material and labor for post tensioning and grouting is incidental to other items.

SB-7 (2433) STRUCTURE RENOVATION

The provisions of Mn/DOT 2433 are modified and/or supplemented with the following:

SB-7.1 Removal of Existing Steel Members

The provisions of 2433 are modified and/or supplemented with the following:

All lead paint that has been identified as peeling must be stabilized by coating with a paint or similar material that will prevent the peeling paint from flaking during demolition, or must be scraped. This must all be completed as per the Mn/DOT Asbestos and Regulated Waste Manual for Structure Demolition or Relocations for Construction Projects.

SB-8 (2442) REMOVAL OF EXISTING BRIDGES

The provisions of Mn/DOT Specification 2442 shall apply except as supplemented herein.

Disposal of materials by the Contractor shall be in accordance with 1506, 2104.3C, 2442, Mn/DOT "Asbestos and Regulated Waste Manual for Structure Demolition or Relocations for Construction Projects" and the following: The Contractor shall furnish written information to the Engineer as to disposal of steel bridge beams and other steel bridge components coated with lead paint. This information shall include method of stabilization and disposal; name, address, and telephone number of disposal site; certification that Contractor has notified disposal site of presence of lead paint; acknowledgment by Contractor of OSHA requirements relating to lead; and certification that Contractor is familiar with proper handling and disposal of materials with lead-based paint systems. All lead paint that has been identified as peeling must be stabilized by coating with a paint or similar material that will prevent the peeling paint from flaking during demolition, or must be scraped. This must all be completed as per the Mn/DOT "Asbestos and Regulated Waste Manual for Structure Demolition or Relocations for Construction Projects". The form supplied in this special provision shall consist of the signature of the authorized Superintendent verifying that the information is correct.

NOTIFICATION FORM ON DISPOSAL OF BRIDGE STEEL

The Contractor is required to provide certain information on disposal of bridge steel which has been painted with lead-based paint. By signing this document, the Contractor certifies that information supplied by the Contractor is correct and that the Contractor is familiar with proper handling and disposal of materials with lead-based paint. This information must be furnished to the Project Engineer a minimum of 30 days prior to removal of the bridge steel from the project site. Any change in method or location of disposal would require resubmittal and a 30 day notice.

Mn/DOT Project No._____ **Bridge No.**_____

Description of Bridge Steel _____

Paint System is Mn/DOT Spec. _____ , _____
(Primer) **(Top Coat)**

Project Engineer: _____

Contractor/Subcontractor: _____
(Name, mailing address, telephone no.)

_____

I _____ certify that the following information is correct:
(print name of authorized representative)

The above bridge steel will be disposed of by the following method(s): _____
(list name,

_____
address and telephone no. of recipient, estimated delivery date, and intended use.)

_____

_____

I also certify that _____ is familiar with
(Contractor/Subcontractor name)
the requirements in OSHA 29 CFR 1926.62 relating to lead, precautions to be taken when working with lead, and proper handling and disposal of materials with lead-based paint systems and that _____ has been notified of the presence of lead-based paint.
(name of recipient)

_____ _____
(signature) **(date)**

Received by Project Engineer/Inspector: _____ _____
(date) **(signature)**

cc: Project File
Office of Environmental Services

SB-9 (2451) STRUCTURE EXCAVATIONS AND BACKFILLS

The provisions of Mn/DOT 2451 are modified and/or supplemented with the following:

SB-9.1 Structure Excavation

The item Structure Excavation shall include all excavation, sheeting and shoring and/or other protection, preparation of foundation, and placing of backfill necessary for construction which is not specifically included in the grading portion of the Contract. It shall also include the disposal of surplus material.

No measurement will be made of the excavated or backfill material. All work performed as specified above will be considered to be included in a single lump sum for which payment is made under Item No. 2401.601, "STRUCTURE EXCAVATION".

For purposes of partial payments, the portion of the lump sum Structure Excavation at each substructure unit will be defined as follows:

Each Abutment 50%

SB-10 (2452) PILING

The provisions of Mn/DOT 2452 are modified and/or supplemented with the following:

Delete the second paragraph of 2452.3H and substitute the following:

Pile welders shall be qualified using AWS D1.1 standards or current Mn/DOT welding certification.

SB-10.1 Equipment for Driving

Delete the first and second paragraph of 2452.3C1 and substitute the following:

All pile driving equipment to be furnished by the Contractor shall be subject to approval by the Engineer. Approval is based on the satisfactory results of a wave equation analysis.

At least 30 calendar days prior to the start of pile driving operations, the Contractor shall submit the following:

1. A completed pile and driving equipment data form for each hammer proposed for the project. The form may be downloaded from the following website: http://www.pile.com/pdi/users/grlweap/equipdatafrm-en.pdf

2. A wave equation analysis in accordance with GRL WEAP or similar program for each pile type and hammer. A hard copy of the results of the analysis,

including a WEAP bearing graph, shall be submitted to the Engineer.

For the pile driving equipment to be acceptable, the required number of hammer blows indicated by the wave equation at 155% of the pile factored design load as shown in the Plans shall be between 30 and 180 blows per foot.

The pile stresses indicated by the wave equation shall be reviewed to determine that the piles can be driven as described in 2452.3D without failure. If stress levels are such that damage to the piling is considered to be likely, adjustments shall be made to the pile driving system or to the strength of the pile until satisfactory results are obtained. Substantial refusal is defined in subsequent paragraphs.

All costs associated with providing the wave equation analysis and submittals as described above shall be an incidental expense to the test piles and no additional compensation will be made for this work.

SB-10.2 Penetration and Bearing

Delete 2452.3E and substitute the following:

A. General

The nominal pile bearing resistances shown in the Plans were calculated using design loadings and indicate the factored loads that the piles are required to support. The nominal resistance determined using the dynamic methods, defined under Determination of Nominal Bearing Resistances, is the basis for establishing the minimum criteria for pile acceptance in which the driving resistance is not less than the resistance specified in the Plans. It may be necessary to drive the foundation piles beyond the specified resistance until the required penetration as shown in the Plan is reached, or until the piles have been driven to a penetration as determined by the engineer based on the test pile results.

Since the purpose of a test pile is to provide information for authorizing the length of the foundation piles, it shall be driven full length unless substantial refusal (as defined below) is encountered at a lesser penetration. If the test pile has been driven full length and 115% of the nominal resistance required for the foundation piles has not been attained the Engineer may order the test pile be driven further as per 2452.3D2 and 2452.4A. If pile redriving is specified in the Plan, the penetrations and time delays shall be in accordance with 2452.3D7 and/or these special provisions.

Substantial refusal, as referenced in 2452.3D, shall be considered to have been attained when the penetration rate is equal to 0.05 inches per blow.

B. Determination of Nominal Bearing Resistance

The required nominal resistance shown in the Plans is based on a field control method as noted. The driven pile nominal resistance shall be determined in accordance with the following provisions using the appropriate corresponding field control method indicated in the Plans. Unless otherwise specified, if more than one field control method

is shown, the method used shall be determined in accordance with the following:

- When the "Pile Analysis" pay item is included for a bridge, the Pile Driving Analyzer (PDA) shall be required for the field control.

- When the "Pile Analysis" pay item is <u>not</u> included for a bridge, the field control method shall be at the Contractor's option. The cost of the PDA shall be incidental to the cost of Piling Driven.

B1. Mn/DOT Nominal Resistance Pile Driving Formula Used as Field Control Method

The nominal pile bearing resistance shall be determined by dynamic formula as follows:

All types of piling driven with power-driven hammers.

$$R_n(\,metric\,) = \frac{867E}{S+5} x \frac{W+(CxM)}{W+M} \qquad R_n(\,english\,) = \frac{10.5E}{S+0.2} x \frac{W+(CxM)}{W+M}$$

WHERE:

R_n	=	Nominal Pile Bearing Resistance in Newtons (**pounds**).
W	=	Mass of the striking part of the hammer in kilograms (**pounds**).
H	=	Height of fall in millimeters (**feet**).
S	=	Average penetration in millimeters (**inches**) per blow for the last 10 or 20 blows, except in cases where the pile may be damaged by this number of blows.
M	=	Total mass of pile plus mass of the driving cap in kilograms (**pounds**).
C	=	0.1 for Timber, Concrete and shell type piles, 0.2 for Steel H piling

*The following definition is for Metric units. See English units below:

E = WHx0.00981 for single acting power-driven hammers. It is equal to the joules or newton-meters (joule = newton-meter) of energy per blow for each full stroke of either single acting or double acting hammers as given by the manufacturer's rating for the speed at which the hammer operates.

*The following definition is for English units:

E = WH for single acting power-driven hammers. It is equal to the foot pounds of energy per blow for each full stroke of either single acting or double acting hammers as given by the manufacturer's rating for the speed at which the hammer operates.

NOTES:

When provisions are not made available for field determination of the energy output on a power-driven hammer, such as measurement of the drop for single-acting hammers, or such as pressure gauges or determination of energy on the basis of the frequency of the blows (cycles per minute) for double-acting hammers, the manufacturer's rated energy shall be reduced by 25 percent. This reduction is not intended to apply when determining the required hammer size. Double-acting hammers, for the purpose of these requirements, will include all hammers for which a power source is utilized for acceleration of the down-stroke of the ram. The dynamic formula specified herein-before are applicable only when:

(a) The hammer has a free fall.
(b) The head of the pile is free from broomed or crushed fibre.
(c) The penetration of the pile is at a reasonably uniform rate.
(d) There is not noticeable bounce after the blow. When there is a noticeable bounce, twice the bounce height shall be deducted from H to determine the value of H in the formula.

B2. Pile Driving Analyzer (PDA) Used as Field Control Method

The nominal pile bearing resistance shall be determined using the pile driving analyzer and the Case Pile Wave Analysis Program (CAPWAP) in accordance with the following section, Dynamic Monitoring of Pile Driving. The WEAP bearing graph listed below under deliverables shall be used to determine the bearing resistances that are recorded on the pile driving report (attach a copy of the bearing graph to the report). For informational and comparison purposes, the bearing resistances shall also be computed using the Mn/DOT formula and recorded on the report.

B3. Piling Supporting Concrete Retaining Walls

The nominal pile bearing resistances shown on Mn/DOT Standard Concrete Retaining Wall Sheets (Mn/DOT Standard Figures 5-297.620 through 5-297.632 dated May 31, 2006) were calculated using the Allowable Stress Design (ASD) Method, Not the LRFD method. If dynamic formulas are used to determine pile resistance for concrete retaining walls in the field, follow Mn/DOT specification 2452.3E as detailed in the 2005 Standard Specifications for Construction in lieu of 2452.3E-A and 2452.3E-B1 shown above. Do not use the formulas shown above to compute pile capacities for concrete retaining walls. For retaining wall plan sheets dated later than May 31, 2006 the inspector must confirm which dynamic formula to use.

SB-10.3 Dynamic Monitoring of Pile Driving

A. Description of Work

The Contractor shall provide all equipment and personnel necessary to perform dynamic pile testing of driven piles using a Pile Driving Analyzer (PDA). The work shall be performed in accordance with the requirements of ASTM 4945. The dynamic pile testing shall be performed on the initial driving and redriving of the test piles as directed by the Engineer. Testing may also be required on additional piles as designated by the Engineer.

B. Pile Preparation and Wave Matching

The Contractor shall prepare each pile to be tested by attaching instrumentation to the piles except that for testing on initial driving of steel shell piles, the Contractor shall attach the instrumentation after the pile has been placed in the leads. In addition, the Contractor shall perform wave matching of the PDA data using the Case Pile Wave Analysis Program (CAPWAP). This work shall be performed by an engineer experienced in dynamic testing and CAPWAP analysis. The program shall be run on all piles dynamically tested, or as directed by the Engineer.

C. Wave Equation Analysis

Following the wave matching, the Contractor shall use the GRLWEAP program and CAPWAP data to produce a refined Wave Equation Analysis Program (WEAP) bearing graph and inspector's chart to be used as the basis for pile acceptance. The bearing graph shall be used to determine the foundation pile's nominal bearing resistance that is to be recorded on the pile driving report. The wave matching analysis and wave equation analysis shall be performed in a timely manner.

D. Deliverables

The Contractor shall provide the following items to the Engineer within the specified time intervals described herein:

1. Results from each dynamic test performed with the PDA and checked with the CAPWAP program. The results shall be in the form of a hard copy of columnar data produced with the PDAPLOT program. The data shall consist of blow counts, stresses in the pile, pile capacities, hammer energies and hammer strokes for each one foot (0.25 meter) depth increment. The results shall be provided in a timely manner. In addition, the Contractor shall provide expert advice regarding the analysis of the PDA and CAPWAP data.

2. A WEAP bearing graph and inspection chart showing blow count-versus-pile resistance and stroke-versus-blow count that will be used for determining the nominal bearing resistance of the foundation piles. The graph/charts shall be developed based on the results of the PDA and CAPWAP data. Both the maximum force and maximum transferred energy calculated by WEAP shall match within 10% of those calculated by the CAPWAP. The bearing graphs shall be delivered to the Engineer within two days after completion of driving the test piles at any single substructure unit. These graphs/charts shall also be documented in the appropriate reports listed below.

3. A brief report for the piles at each substructure tested including a summary of the PDA and CAPWAP results. In addition, the Contractor shall supply one or more 3.5 inch diskettes or CD containing all data for the piles tested for that substructure. The data shall be in the form of X01 (PDA file) and Q00 (PDAPLOT file) files and shall be properly labeled. These reports shall be sent to the Engineer no later than three working days after dynamic pile tests have been completed at any given substructure unit.

4. A PDA summary report which summarizes the findings from the PDA and the associated CAPWAP computer program and the developed GRLWEAP bearing graphs. This report shall be sent to the Engineer no later than one week following the completion of the dynamic pile tests, addressed separately.

E. Method of Measurement

When the Pile Driving Analyzer field control method is required by the contract, measurement will be by the number of piles on which the pile driving analysis is performed. Initial analysis and redrive analysis on an individual pile shall be counted as one pile analysis. The Department reserves the right to increase or decrease the number of piles which are required to be dynamically monitored.

When the Pile Driving Analyzer field control method is not required by the contract but is chosen at the Contractor's option, no measurement will be made of the analyses performed and all costs associated with the dynamic testing will be at the Contractor's expense.

SB-10.4 Pile Points

This work consists of furnishing pile points for cast-in-place concrete piles in lieu of flat driving shoes and shall be performed in accordance with the following:

The first paragraph of 2452.3D6 shall not apply to piles equipped with conical pile points.

The bottom of each shell shall be equipped with a commercially manufactured conical pile point of cast steel, which shall be attached to the pile in accordance with the manufacturer's recommendations and made watertight by welding.

The pile point shall be approved by the Engineer prior to attachment to the pile.

Pile points are required at the abutment piles.

Payment for pile points will be by the number of authorized piles, including test piles, with their tips protected.

Payment will be made under Item 2452.602 "PILE POINTS 12 INCH", at the Contract price per each, which shall be compensation in full for all costs of furnishing the points and attaching them to the piles.

SB-10.5 Extensions and Splices

Delete the fourth paragraph of 2452.3H and substitute the following:

Commercial drive fit splices may be permitted on a performance basis, subject to approval of the Engineer. However, such splices shall not be used in pile bent type piers or abutments, or where foundation soils are soft or unstable, or in foundations where uplift is anticipated (concrete seals), or where down drag is indicated in the pile load table, or within 3 m (**10 feet**) of the pile cut-off.

SB-11 (2461) STRUCTURAL CONCRETE

The provisions of 2461 shall apply except as modified herein.

Add the following to Item (c) in the fourth paragraph of 2461.3B2:

The minimum cementitious content for bridge deck concrete shall be 362 kg per m^3 (**611 pounds per yd^3**).

SB-12 (2471) STRUCTURAL METALS

The provisions of Mn/DOT 2471 are modified and/or supplemented with the following:

Delete the fourth paragraph of 2471.3A2 and substitute the following:

The Contractor/Fabricator performing coating application must demonstrate qualification by obtaining the AISC Sophisticated Paint Endorsement (SPE), the SSPS QP Certification, or a Quality Control Plan (QCP) that is acceptable to the Engineer.

Add the following to the end of the second paragraph of 2471.3C:

The Engineer will audit suppliers with approved QCP's on a biannual or annual basis or as deemed necessary by the Engineer to determine if the QCP is being implemented. The Department will invoke its Corrective Action Process if the audit indicates non-

conformance. Corrective action, up to and including the supplier hiring a third party Quality Control Inspector, may be required as a disciplinary step, at no cost to the Department. A copy of the Departments Corrective Action Process is available from the Engineer.

Add the following to 2471.3E1 as the first paragraph:

Steel plates and splice plates for major structural components shall be cut and fabricated so that the primary direction of rolling is parallel to the direction of the main tensile or compressive stresses.

Add the following to 2471.3F:

F1b Web-to-Flange Welds

For the purpose of this specification, a repair is defined as any area of the welded product not in compliance with the current edition of AASHTO AWS D1.5 Bridge Welding Code. Limit each individual web-to-flange weld repairs to 2 percent of the weld length and grinding web-to-flange weld repairs to 5 percent of the weld length. Exceeding these limits will result in revocation of the Welding Procedure Specification (WPS) used to perform the initial production welding.

Add the following as 2471.3G1:

G1 Fracture Critical Welder Qualifications

Fracture Critical Welder Qualifications shall be in accordance with AASHTO/AWS D1.5-Bridge Welding Code. Annual requalification shall be based upon acceptable radiographic test results of either a production groove weld or test plate. If a welder is requalified by test, a WPS written in accordance with the requirements of D1.5, shall be used and the test plate shall be as shown in Figure 5.24. The WPS shall be included in the Fabricators QCP.

Add the following to 2471.3N1:

Work that is not performed in accordance with the suppliers approved QCP shall be subject to rejection in accordance with 1512.

SB-13 (3371) STEEL SHELLS FOR CONCRETE PILING

The provisions of Mn/DOT 3371.2 are modified and/or supplemented with the following:

Add the following to 3371.3:

The use of small quantities of piling from the Contractor's surplus of cut-offs and overruns may be submitted for use and approved by the Engineer. These materials shall be certified by the Contractor to be remaining quantities of materials previously submitted with accompanying Mill Test Reports and subsequently approved for use on other projects. Pile splices used to make up authorized pile lengths shall be considered to have been made at the

Contractor's convenience and shall not be considered eligible for extra compensation under 2452.4B.

SB-14 **(3391) FASTENERS**

Delete the contents of 3391.2B and substitute the following:

Bolts shall meet ASTM A 325, Type 1 (for painted applications) or Type 3 (for unpainted weathering steel applications). Bolts shall have sufficient grip length to expose one thread beyond outside nut surface. ASTM A 325 bolts may be retightened once after having been fully tightened. Bolts larger than those defined by ASTM A 325 shall meet ASTM A 354, Grade BC.

Nuts shall meet ASTM A 563. Nuts shall be heavy hex and meet either Grade C or DH (for painted applications) and either Grade C3 or DH3 (for unpainted weathering steel applications).

Washers shall be hardened steel and shall meet ASTM F 436, Type 1 (for painted applications) or Type 3 (for unpainted weathering steel applications).

Bolts, Nuts, and Washers which are completely installed before application of the prime coat shall be uncoated "black" bolts and shall receive the same paint coatings as the structural steel. Fasteners which are field installed after the application of the prime coat to the structural steel shall be supplied mechanically galvanized according to ASTM B 695 Class 50 requirements.

At the time of installation of fasteners, all nuts, regardless of their specified finish, shall be lubricated with a lubricant of contrasting color as per ASTM A 563 Supplementary requirements S1, S2, and S3.

SB- Delete the first two sentences of 3391.2E and add the following:

Stainless steel bolts are to meet the requirements of ASTM F 593, Condition CW1, Type 304, 316, or 316L, with a minimum yield strength of 415 MPa (**60,000 psi**), an ultimate tensile strength of 660 MPa (**95,000 psi**), and a minimum elongation of 20 percent in 50 mm (**2 inches**). The nuts are to meet the requirements of ASTM F 594, Condition CW1, Type 304, 316, or 316L.

SB-15 **(3741) ELASTOMERIC BEARING PADS**

The provisions of 3741 shall apply except as modified below:

Replace the first sentence in 3741.2A with the following:

The elastomeric portion of the bearing pads shall be in accordance with AASHTO M251-04 with a specified Shore A scale hardness of 60 ±5 durometers. The elastomer compounds shall be classified as of low-temperature Grade 4 as specified by the grade

requirements of Table 14.7.5.2-2, "Low temperature Zones and Minimum Grade of Elastomer", of the *AASHTO LRFD Bridge Design Specifications*.

Delete all of 3741.2B1 except for the last paragraph.

NOTIFICATION FORM ON DISPOSAL OF BRIDGE STEEL

The Contractor is required to provide certain information on disposal of bridge steel which has been painted with lead-based paint. By signing this document, the Contractor certifies that information supplied by the Contractor is correct and that the Contractor is familiar with proper handling and disposal of materials with lead-based paint. This information must be furnished to the Project Engineer a minimum of 30 days prior to removal of the bridge steel from the project site. Any change in method or location of disposal would require resubmittal and a 30 day notice.

Mn/DOT Project No._____ **Bridge No.**_____

Description of Bridge Steel_____

Paint System is Mn/DOT Spec. _____ , _____
(Primer) **(Top Coat)**

Project Engineer: _____

Contractor/Subcontractor: _____
(Name, mailing address, telephone no.)

_____

I _____ certify that the following information is correct:
(print name of authorized representative)

The above bridge steel will be disposed of by the following method(s): _____
(list name,

_____
address and telephone no. of recipient, estimated delivery date, and intended use.)

_____

_____

I also certify that _____ is familiar with
(Contractor/Subcontractor name)
the requirements in OSHA 29 CFR 1926.62 relating to lead, precautions to be taken when working with lead, and proper handling and disposal of materials with lead-based paint systems and that _____ has been notified of the presence of lead-based paint.
(name of recipient)

_____ _____
(signature) **(date)**

Received by Project Engineer/Inspector: _____ _____
(date) **(signature)**

cc: Project File
Office of Environmental Services

Blue Earth County Department of Public Works

Storm water Pollution Prevention Plan (SWPPP)
To comply with the
General Stormwater Permit for Construction Activity (MN R100001)

Construction Activity Information		
Project Name		
County Road 152, Bridge No. 07557 Replacement, Approach Grading, Surface		
Project Location		
On C.R. 152 over the Maple River. 0.5 mi South of TH 30, about 6.5 mi west of Mapleton..		
City or Township Sterling Township	State, Zip Code MN	
County Parcel ID # *Attach list if necessary* See Plan Set for Construction Limits		
All cities where construction will occur NA		
All counties where construction will occur Blue Earth County	All townships where construction will occur Sterling Township	
Project Size (number of acres to be disturbed)		
8.8 Acres		
Project Type		
☐ Residential	☐ Commercial/Industrial	☐ Road Construction
X Other (describe): Bridge Replacement and Approach Grading		
Cumulative Impervious Surface		
Existing area of impervious surface 1.6 (to the nearest quarter acre)		
Post construction area of impervious surface 1.9 (to the nearest quarter acre)		
Receiving Waters		
Name of Water Body	Type (ditch, pond, wetland, lake, stream, river)	Appendix A special water?
Maple River	River	☐ Yes X No
		☐ Yes ☐ No
		☐ Yes ☐ No
		☐ Yes ☐ No
Dates of Construction		
Construction Start Date 12/1/2010	Estimated Completion Date 7/15/2011	

Contact Information		
Owner of the Site		
Business of Firm Name Blue Earth County	Federal Tax ID 416005763	State Tax ID 8026343
Last Name First Name Title Forseberg, Alan, County Engineer	E-mail alan.forsberg@co.blue-earth.mn.us	Telephone (*include area code*) 507-304-4025
Mailing Address	City	State, Zip Code

35 Map Drive, P.O. Box 3083	Mankato	MN, 56002-3083
Alternate Contact Last Name, First Name Thilges, Ryan	E-mail ryan.thilges@co.blue-earth.mn.us	Telephone (*include area code*) 507-304-4025

Contractor (Person who will oversee implementation of the SWPPP)

Business of Firm Name	Federal Tax ID	State Tax ID
Last Name First Name Title	E-mail	Telephone (*include area code*)
Mailing Address	City	State Zip Code
Alternate Contact Last Name First Name	E-mail	Telephone (*include area code*)

General Construction Project Information

Describe the construction activity (what will be built, general timeline, etc.):

The contract documents, plans and specifications titled 'Minnesota Department of Transportation, Blue Earth County Minnesota, Construction Plans for Bridge, Grading and Surface for Bridge 07557' are hereby incorporated into this SWPPP by reference and are considered an integral part of this SWPPP.

Describe soil types found at the project.

Storden – Consists of deep, rolling to very steep, well drained, medium textured soils. These soils formed in limy, loamy glacial till. They are on knolls and convex slopes in the uplands. In a representative profile the surface layer is limy, very dark grayish brown loam about 8 inches thick. The underlying material is limy, dark grayish brown and light olive brown, friable loam. Permeability is moderated.

Comfrey – Consists of deep, poorly drained, nearly level soils. These soils formed in recent medium textured and moderately fine textured alluvium on nearly level stream flood plains. In a representative profile the surface layer is black friable clay loam and loam about 34 inches thick. The underlying material is mottled dark grayish brown, very dark gray, and olive friable loam. Permeability is moderate.

General site information (III.A)

Off-Site Vehicle Tracking:
The project area is not an isolated site; therefore, providing a single stabilized construction entrance is not possible. Stabilized construction entrances should be provided if possible, and the Contractor will be responsible for cleaning up any offsite vehicle tracking on adjacent City streets. There are charges that may be withheld from the contract for failure to sweep streets on a timely basis.

Were storm water mitigation measures required as the result of an environmental, archaeological, or other required local, state, or federal review of the project? If yes, describe how these measures were addressed in the SWPPP. (III.A.5.)

The County has standards and rules for the implementation of stormwater best management practices. Furthermore, the MPCA has jurisdiction over the project via the National Pollutant Discharge Elimination System (NPDES) permit process. As part of the NPDES permitting process, this stormwater pollution prevention plan (SWPPP) has been created during final design of the proposed project.

Is the project located in a karst area such that additional measures would be necessary to protect drinking water supply management areas as described in Minn. R. chapters 7050 and 7060? If yes, describe the additional measures to be used. (III.A.6.)

NOT APPLICABLE

- Does the site discharge to an impaired water that has an approved TMDL implementation plan that contains requirements for construction stormwater discharges? (III.A.7)

The Maple River is an impaired water with an approved TMDL implementation plan. All project with a discharge point within 1 mile of an impaired water must incorporate the additional best management practices (BMPs) C.1 & C.2 found in Appendix A of the permit for all portions of the project that drain to the discharge point:

C.1 During Construction

a. All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased.
b. Temporary sediment basin requirements described in Part III.B.1-5 must be used for common drainage locations that serve an area with five (5) or more acres disturbed at one time.

C.2 Post Construction

The water quality volume that must be treated by the project's permanent stormwater management system described in Part III.C. shall be one (1) inch of runoff from the new impervious surfaces created by the project. Where site conditions allow, at least ½ inch of the water quality volume must be infiltrated. See PartIII.C.2 for more information on infiltration design and appropriate site conditions. If it is determined that site conditions are not appropriate for infiltration (e.g. lack of 3 ft. of separation to seasonally saturated ground water, proximity to bedrock, contaminated soils) the reasons should be documented in the Stormwater Pollution Prevention Plan (SWPPP) for the project infiltration is not required in Hydrologic Soil Group D soils.

Selection of a Permanent Stormwater Management System (III.C)

Will the project create a new cumulative impervious surface greater than or equal to one acre? ☐ Yes X No
If yes, a water quality volume of ½ inch of runoff from this area must be treated before leaving the site or entering surface waters (1 inch if discharging to special waters).

Describe which method will be used to treat runoff from the new impervious surfaces created by the project (III.C):
The proposed project will feature a rural stormwater conveyance system with corresponding ditches, each discharging to designated best management practices. Most stormwater generated from the project will be directed to stormwater detention basins.

Erosion Prevention Practices (IV.B)

Temporary Stabilization – Refer to the project plan set and section 2575 of the project specification
Permanent Stabilization – Refer to the project plan set and section 2575 of the project specification

The Contractor shall utilize construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices to minimize erosion. Delineate areas not to be disturbed (e.g., with flags, stakes, signs, silt fence, etc.) before work begins.

The timing of control measures will be as indicated in the project Plan Set and Contract Documents. Once construction activity ceases permanently in an area, that area will be stabilized with permanent sod or seed and mulch. After the site is stabilized, the accumulated sediment will be removed from the erosion control measures and all temporary controls will be removed.

For any drainage or diversion ditches, Contractor shall stabilize the normal wetted perimeter within 200 lineal feet of the property edge or point of discharge to a surface water.

Describe other erosion prevention practices (list and describe).

Seeding, Mulching, Erosion Control Blankets and Hydraulic Soil Stabilizer shall be used.

Sediment Control Practices (IV.C)

Sediment control practices shall be used as shown in the project Plan Set and in any additional locations as necessary throughout construction to minimize erosion and minimize sediment from reaching the receiving waters. The proposed sediment control practices include, but are not limited to:

- Silt Fence (Heavy Duty & Machine Sliced)
- Temporary Ditch Checks
- Storm Drain Inlet Protection
- Erosion Control Supervisor
- Culvert Protection

At a minimum, sediment control practices must include:

- Sediment controls for temporary or permanent drainage ditches and sediment basins that are designed as part of a treatment system
- Installation of check dams or other grade control practice to ensure sheet flow and prevent rills (for slope lengths greater than 75 feet with a grade of 3:1 or steeper).
- Sediment control practices on all down gradient perimeters prior to land disturbing activities.
- Storm drain inlet protection for all inlets.
- Silt fencing or other sediment control surrounding temporary soil stockpiles.
- Minimize vehicle tracking of sediments (e.g., stone pads, concrete or steel wash racks, or equivalent systems).
- Street sweeping of tracked sediment.
- Temporary sedimentation basins (see Part III.B).

Dewatering and Basin Draining (IV.D)

Will the project include dewatering or basin draining? ☐ Yes X No

If yes, describe BMPs used so the discharge does not adversely affect the receiving water or downstream landowners.

NOT APPLICABLE

Additional BMPs for Special Waters and Discharges to Wetlands (Appendix A, Parts C and D)

Special Waters. Does your project discharge to special waters? ☐ Yes X No If no, skip to Wetlands section below.

Wetlands. Does your project discharge stormwater with the potential for significant adverse impacts to a wetland (e.g., conversion of a natural wetland to a stormwater pond)? ☐ Yes X No

Inspections and Maintenance (IV.E)

These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls:

1. Once every seven (7) days during active construction and, within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.
2. Where parts of the construction site have undergone final stabilization, but work remains on other parts of the site, inspections of the stabilized areas may be reduced to once per month. Where work has been suspended due to frozen ground conditions, the required inspections and maintenance must take place as soon as runoff occurs at the site prior to resuming construction, whichever comes first.
3. All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report.
4. Built up sediment will be removed from silt fence when it has reached one-third the height of the fence.
5. All BMP's will be inspected for depth of sediment, breaches, tears, to verify that fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
6. Temporary and permanent seeding will be inspected for bare spots, washouts, and healthy growth.
7. Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of sediment being deposited by erosion. All deltas and sediment deposits discovered in surface waters, including drainage ways, catch basins, and other drainage systems shall be removed and the areas stabilized within seven calendar days of discovery unless precluded by legal, regulatory, or physical access constraints. If precluded, removal and stabilization must take place within seven calendar days of obtaining access. All necessary permits must be obtained prior to conducting work.
8. Construction site entrance areas must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all off-site paved surfaces within 24 hours of discovery.
9. A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached.
10. The Owner and Contractor will select one individual who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance report.
11. Personnel selected for inspections and maintenance responsibilities will receive training and available MPCA documentation. Particular focus will be toward training in all inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

Non-Storm Water Discharges

It is expected that the following non-storm water discharges will occur from the site during the construction period.

- Uncontaminated ground water form excavation dewatering activities.

All non-storm water discharges will be directed through sediment removal devices such as bioroll ditch checks prior to discharge to the receiving water.

Pollution Prevention Management Measures (IV.F)

Describe practices to properly manage and dispose of solid waste, including trash (IV.F.1)

Collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of property and comply with MPCA disposal requirements.

Described practices to properly manage hazardous materials (IV.F.2).

Oil, gasoline, paint, and any hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks or other discharges. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be incompliance with MPCA regulations.

The materials or substances listed below are expected to be present on-site during construction:

- Concrete
- Asphalt
- Aggregates
- Mastics for sealing adjusting rings, etc.
- Fertilizers
- Sediment from disturbed soil

Material Management Practices:
The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.

The following good housekeeping practices will be followed onsite during the construction project:

1. An effort will be made to store only enough products required to do the job.
2. All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible under a roof or other enclosure.
3. Products will be kept in their original containers with the original manufacturer's label.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.
7. The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.

These practices are used to reduce the risks associated with hazardous materials:

1. Products will be kept in original containers unless they cannot be resealed.
2. Original labels and material safety data sheets (MSDS) will be retained and posted as necessary; they contain important product information.
3. If surplus products must be disposed of manufacturers' or local and State recommended methods for proper disposals will be followed.
4. All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. No on-site petroleum product storage is anticipated. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations and/or project specifications.
5. Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.
6. All paint containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be property disposed of according to manufacturers' instruction or State and local.
7. Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site, unless a discharge pit is constructed which can fully contain the discharge water plus the runoff from a 6-inch rainfall.

In addition to the good housekeeping and material management practices discussed in the previous sections of

this plan, the following practices will be followed for spill prevention and cleanup:

1. Site personnel will be made aware of the procedures and the location of the information and cleanup supplies if any spills would occur.
2. All spills will be cleaned up immediately after discovery.
3. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
4. Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.
5. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
6. The Contractor's and Owner's representative, the parties responsible for the day to day site operations, will be the spill prevention and clean-up coordinators. They will designate at leas one other site person who will receive spill prevention and cleanup training. This individual will become responsible for each particular phase of prevention and cleanup. The name of the responsible spill person will be posted in the material storage area.

Describe practices for external washing of trucks and other construction vehicles (IV.F.3)

External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.

Describe measures to address sanitary and septic waste.

The Contractor will furnish temporary sanitary facilities.

Final Stabilization (IV.G)

Describe how you will achieve final stabilization of the site (IV.G). Submit a NOT within 30 days after final stabilization.

Temporary Stabilization – Refer to section 2575 of the project specification
Permanent Stabilization – Refer to section 2575 of the project specification

Records Retention (III.D)

Describe your record retention procedures (must be kept at the site) (III.D). Records must include:

- Copy of SWPPP and any changes
- Inspection and maintenance records
- Permanent operation and maintenance agreements
- Calculations for the design of temporary and permanent stormwater management systems.

GENERAL PERMIT
PUBLIC WATERS
WORK PERMIT

Permit Number General Permit
2010-0402

Minnesota
DEPARTMENT OF NATURAL RESOURCES

Pursuant to Minnesota Statutes, Chapter 103G, and on the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant and other supporting data, all of which are made a part hereof by reference, **PERMISSION IS HEREBY GRANTED** to the Applicant to perform the work as authorized below:

Public Water	**Name of Permittee**
ALL WATERS SHOWN ON PUBLIC WATERS INVENTORY	COUNTY PUBLIC WORKS DEPARTMENT C/O COUNTY HIGHWAY ENGINEER

Counties: **Big Stone, Blue Earth, Brown, Chippewa, Cottonwood, Dodge, Faribault, Freeborn, Jackson, Kandiyohi, Lac Qui Parle, Le Sueur, Lincoln, Lyon, Martin, McLeod, Meeker, Mower, Murray, Nicollet, Nobles, Pipestone, Redwood, Renville, Rice, Rock, Sibley, Steele, Swift, Waseca, Watonwan, Yellow Medicine**

Authorized Work:
Construct, replace, or repair bridge/culvert crossings according to plans and specifications developed by or for your office and subject to all terms and conditions of this permit. No culvert or bridge crossing that serves as a water level control structure is permitted under this General Permit. Channel excavation to re-establish hydraulic adequacy at the structure is allowed by this permit provided it is limited to the minimum extent necessary. All maintenance excavation shall be limited to no more than the channel dimensions (length, width, depth) of the original "as constructed" crossing.

Purpose of Permit:	**Expiration Date of Permit**
Bridge/culvert construction, replacement and maintenance	December 31, 2014

Property Described As:
Crossings on all county highways and county administered roads within the County

This permit is granted **subject to** the following **CONDITIONS:**

1. The **permittee** is not released from any rules, regulations, requirements, or standards of any applicable federal, state, or local agencies, including, but not limited to, the U.S. Army Corps of Engineers, Board of Water and Soil Resources, MN Pollution Control Agency, watershed districts, water management organizations, county, city, and township zoning. This permit does not release the **permittee** of any permit requirement of the St. Paul district, U.S. Army Corps of Engineers, Army Corps of Engineers Centre,190 Fifth Street East, St. Paul, MN 55101-1638.

2. This permit is not assignable by the **permittee** except with the written consent of the Commissioner of Natural Resources.

3. The **permittee** shall notify the Area Hydrologist at least five days in advance of the commencement of the work authorized hereunder and notify him/her of its completion within five days. The Notice of Permit issued by the Commissioner shall be kept securely posted in a conspicuous place at the site of operations.

4. The **permittee** shall make no changes, without written permission previously obtained from the Commissioner of Natural Resources, in the dimensions, capacity, or location of any items of work authorized hereunder.

5. The **permittee** shall grant access to the site at all reasonable times during and after construction to authorized representatives of the Commissioner of Natural Resources for inspection of the work authorized hereunder.

6. This permit may be terminated by the Commissioner of Natural Resources at any time deemed necessary for the conservation of water resources of the state, or in the interest of public health and welfare, or for violation of any of the provisions or applicable law of this permit, unless otherwise provided in any of the conditions of this permit.

7. Construction work authorized under this permit shall be completed on or before the date specified above. The **permittee** may request an extension of the time to complete the project, stating the reason thereof, upon written request to the Commissioner of Natural Resources.

8. In all cases where the **permittee** by performing the work authorized by this permit shall involve the taking, using, or damaging of any property rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the **permittee**, before proceeding, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests needed for the work.

9. This permit is permissive only. No liability shall be imposed by the State of Minnesota or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the **permittee** or any of its agents, employees, or contractors. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the **permittee**, its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the **permittee**, its agents, employees, or contractors for violation of or failure to comply with the permit or applicable provisions of law.

10. Any extension of the surface of public waters from work authorized by this permit shall become public waters and left open and unobstructed for use by the public.

11. Where the work authorized by this permit involves the draining or filling of wetlands not subject to DNR regulations, the **permittee** shall not initiate any work under this permit until the **permittee** has obtained official approval from the responsible local government unit as required by the Minnesota Wetland Conservation Act.

CONTINUED CONDITIONS – SEE ATTACHED SHEETS

ec: Area Hydrologist
DNR Area Fisheries Manager
DNR Area Wildlife Manager
DNR Conservation Officer
John Fax, DNR Waters Permits Unit
County Zoning Administrator
County SWCD
Watershed District (if applicable)
Kevin Mixon, DNR Ecological Resources
USCOE

Authorized Signature	**Title**	**Date**
Skip Wright Skip Wright	Regional Hydrologist	April 12, 2010

12. **Additional Projects.** Projects that are not identified on the annual work plan, but materialize at a later date and are identified by the county for construction under this permit, must be submitted to the Area Hydrologist in writing at least fifteen (15) days prior to construction. Verbal approval must be received prior to commencing such additional projects.

13. **Annual Reporting/Meeting.** The **permittee** shall report annually to the Area Hydrologist, concerning work accomplished for the prior year and anticipated projects scheduled for the upcoming year. The report shall be filed prior to January 15 of each year. The **permittee** is required to meet prior to April 15 of each year to discuss the work accomplished for the prior year, anticipated projects for the upcoming year, and those under consideration over the next five years. The report shall include a hydrologic/hydraulic data report and risk assessment for each anticipated project for the upcoming year.

14. **Applicable Projects.** To qualify under this general permit, all projects affecting public waters must be designed under the supervision of a registered professional engineer. **Any project not meeting all conditions of the permit or any project the Department identifies as having the potential for significant resource impacts is not authorized herein.**

15. **Coffer Dams and Fill Pads**. No construction of temporary channel diversions or placement of fill below the OHW for temporary work pads, bypass roads, access roads, or coffer dams to aid in construction of any authorized structure is allowed **unless specifically approved in writing by the Area Hydrologist.** Plans need to be: 1) submitted at least 15 days prior to construction and 2) be consistent with the Best Management Practices Manual for meeting DNR General Public Waters Work Permit 2004-0001.

16. **Contractor. Permittee** shall ensure that all contractors receive and thoroughly understand the conditions of this permit

17. **Fish Passage.** Bridges, culverts and other crossings shall provide for fish movement unless the structure is intended to impede rough fish movement or the stream has negligible fisheries value as determined by the Area Hydrologist in consultation with the Area Fisheries Manager. The accepted practices for achieving these conditions include:

    A. Where possible a single culvert or bridge shall span the natural bankfull width to allow for debris and sediment transport rates to closely resemble those of upstream and downstream conditions. A single culvert shall be recessed in elevation in order to pass bedload and sediment load. Additional culvert inverts shall be set at a higher elevation. All culverts should match the alignment and slope of the natural stream channel, and extend through the toe of the road side slope. "Where possible" means that other conditions may exist and could take precedence, such as unsuitable substrate, natural slope and background velocities, bedrock, flood control, 100 year flood elevations, wetland/lake level control elevations, local ditch elevations, and other adjacent features.

    B. Rock rapids or other structures may be used to retrofit crossings to mimic natural conditions.

18. **Fish Spawning and Movement.** There shall be no work during the period of ice out to June 15 to allow for fish spawning and migration. For trout streams no work shall be done from September 15th thru April 15th. Where the **permittee** demonstrates that a project will minimize impacts to fish habitat or if work during this time is essential, work during this period may occur only upon written approval of the DNR Area Fisheries Manager.

19. **Topeka Shiner**. No work in the bed of any watercourse within the Missouri River Basin is allowed between ice out and August 15th. Work areas which drain towards the watercourse shall be protected from erosion through the placement of silt fences and/or hay bales staked six inches into the ground. Erosion control measures shall be maintained throughout the project site until all exposed areas have a fully established grass cover. (Rock, western Nobles, SW Murray, Pipestone & SW Lincoln are in this area.)
http://www.fws.gov/midwest/Endangered/fishes/tosh_mn.html

20. **Environmental Review.** If the bridge/culvert construction is part of a road project that is subject to mandatory environmental review or legally petitioned environmental assessment worksheet (EAW), this permit is not valid until the environmental review is complete, consistent with Minnesota Rules, part 4410.3100. The outcome of the environmental review may affect work authorized by this permit.

21. **Erosion and Sediment Control.** In all cases, adequate measures of Best Management Practices (BMPs) to control sediment from leaving the worksite shall be installed adjacent to public waters and on in-water work areas. In all cases, Best Management Practices (BMP's) and/or sediment control BMPs, such as mulches, blanket, temporary coverings, silt fence, silt curtains/barriers, vegetation preservation, redundant BMPs, isolation of flow, or other engineering practices, shall be installed concurrently or within 24 hours after the start of the project. These measures shall be maintained, or improved if needed, for the duration of the project in order to prevent sediment from leaving the worksite. Adequate measures include:

A. For projects that have worksites one acre or greater, MPCA's General Stormwater Permit for Construction Activity (MNR100001) requirements and enforcement actions apply. A copy of the Stormwater Pollution Prevention Plan (SWPPP) and a Site Plan shall be submitted to the DNR Area Hydrologist for review. Failure to prevent sediment from entering public waters may result in both MPCA and DNR enforcement actions.

B. For projects with worksites less than one acre (when an MPCA General Stormwater Permit for Construction Activity is not required), Part IV Construction Activity Requirements of the MPCA General Stormwater Permit for Construction Activity can be utilized to meet DNR Erosion and Sediment Control requirements (see http://www.pca.state.mn.us/publications/wq-strm2-51.doc). A Site Plan shall be submitted to the DNR Area Hydrologist for review. Failure to prevent sediment from entering public waters may result in DNR enforcement actions.

When conflicting requirements, specifications, or measures exist, the more restrictive shall apply. DNR requirements may be waived in writing by the DNR Area Hydrologist based on site conditions, expected weather conditions, or project completion timelines.

22. **Excavated Material Handling.** Excavated materials must be deposited or stored in an upland area, in a manner where the materials will not be re-deposited into the protected water by reasonably expected high water or runoff.

23. **Fall Projects.** In the event the site cannot be stabilized with vegetation before October 15th, all exposed soil shall be adequately mulched at a rate of not less than 3500 lbs./acre leaving no more than 20 percent visible soil surface and maintained until seeding/sodding can be achieved the following spring.

24. **Flood Stage/Damage Not Increased.** For the replacement of existing structures, stage increases for the regional (100-year) flood may be allowed up to that created by the existing structure, provided there are no structures in the reach affected by the proposed stage increase. For new structures, the maximum allowable increase in the regional flood is 0.5 foot or the more restrictive provisions of a local government via their floodplain management ordinance. Stage increases in excess of these thresholds must be approved in writing by the Department of Natural Resources.

25. **Flowline/Gradient Not Changed.** No change in the existing channel flowline/gradient shall occur unless specifically authorized in writing by the Area Hydrologist.

26. **Maintenance.** The **permittee** is authorized to maintain the approved work to the dimensions herein described. Prior to commencing any maintenance work, **permittee** shall advise the Area Hydrologist of the extent and method of maintenance. Maintenance work shall not be commenced until the **permittee** receives approval from the Area Hydrologist.

27. **Navigation Maintained or Improved. Permittee** is responsible for maintaining or improving existing navigation to meet public needs for use of and access to public waters.

28. **Notify LGU if Work is above OHW.** The **permittee** shall contact the responsible local government unit (LGU) official if any grading, filling or removal of woody vegetation is to be done above (landward) the ordinary high water level.

29. **Photos and As-Builts.** Upon completion of the authorized work, the **permittee** shall submit representative photographs and any as-built surveys of the project area to the Area Hydrologist.

30. **Rock Riprap.** Unless otherwise authorized, Mn/DOT Class III natural rock riprap shall be used to armor both the upstream and downstream ends of any culverts. The channel banks and roadway embankment shall be shaped to a 3:1 (horizontal:vertical) finished slope. Riprap shall be placed along the channel and roadway embankment to an elevation one (1) foot above the top of the culvert. Riprap shall be a minimum of 1.5 feet thick and extend at least 25 feet from the ends of all culverts. Non-woven filter fabric shall be placed on all slopes to be rock riprapped. During placement of riprap, rock shall **NOT** be dropped from a height greater than two feet above the ground to ensure the filter fabric is not damaged. The finished slope of the riprap shall be varied in fashion to provide a smooth transition to the adjacent grade/natural shore

31. **Removal.** All material resulting from demolition of the existing structure(s) shall be completely removed from the public water and any associated floodplain for proper disposal in accordance with all local, state, or federal regulations.

32. **Right to Review.** The Division of Waters reserves the right to review this permit as additional hydrologic data become available and to issue any further order as may become necessary to protect public interest.

33. **Swallows.** The **permittee** is responsible to determine if barn swallows or cliff swallows nest under this bridge. If so, it will be necessary to obtain a U.S. Fish and Wildlife Service permit to destroy swallow nests or eggs.

34. **Invasive Species.** All equipment intended for use at a project site must be free of prohibited invasive species and aquatic plants ***prior*** to being transported into or within the state and placed into state waters. All equipment used in infested waters, shall be inspected by the contractors and adequately decontaminated ***prior*** to being transported. The DNR is available to train site inspectors and/or assist in these inspections. A list of designated infested waters can be found at http://files.dnr.state.mn.us/eco/invasives/infestedwaters.pdf.

Basic measures to prevent the spread of aquatic invasive species are:

A. Before transporting equipment from a work site, inspect all equipment that had been in contact with the water and remove all visible aquatic remnants (plants, seeds, mud, soil, and animals). Power washing followed by drying (7 days) is an acceptable method to ensure killing and removal of invasive species.

B. Before transporting equipment from a work site, drain all water from equipment where water may be trapped, such as tanks, pumps, hoses, silt curtains, and water-retaining components of boats/barges.

C. After spraying and draining, dry equipment that has been in infested waters for a minimum of seven (7) days before reuse.

When the methods above are not practical, contact the DNR Regional Invasive Species Specialist at (507) 359-6000 to determine alternative treatments.

35. **Dewatering.** Temporary dewatering for bridge, culvert, or stormwater outfall work is authorized by this permit when the following additional conditions are met: Stream diversion water must be kept separate from worksite dewatering. All worksite discharge water must be treated for sediment reduction prior to return to the waterbody (see condition #21). Stream diversion water shall be immediately returned to the original channel downstream. Water from designated infested waters may not be diverted to other waters, transported on a public road, or transported or appropriated off property riparian to infested waters without a DNR permit specifically for this use. All equipment in contact with infested waters must be decontaminated as per Condition #34 upon leaving site.

Authorized Signature	**Title**	**Date**
Skip Wright Skip Wright	Regional Hydrologist	April 12, 2010

ec: Area Hydrologist
DNR Area Fisheries Manager
DNR Area Wildlife Manager
DNR Conservation Officer
John Fax, DNR Waters Permits Unit
County Zoning Administrators
County SWCD
Watershed District (if applicable)
Kevin Mixon, DNR Ecological Resources
USCOE
Regional Director

Asbestos and Hazardous Materials Survey Report

Bridge #90556, CR 152 Over The Maple River
Sterling Center Township, Minnesota

Prepared for

Blue Earth County Highway Department
35 Map Drive
Mankato, MN 56001

May 27, 2008
MA-08-01542

Braun Intertec Corporation

BRAUN
INTERTEC

Braun Intertec Corporation
153 Chestnut Street
Mankato, MN 56001

Phone: 507.345.4913
Fax: 507.345.5042
Web: brauninterteccom

May 27, 2008

Project No. MA-08-01542

Mr. Ryan Thilges
Blue Earth County Highway Department
35 Map Drive
Mankato, MN 56001

Re: Asbestos and Hazardous Materials Survey
Bridge #90556, CR 152 over the Maple River
Sterling Center Township, Minnesota

Dear Mr. Thilges:

The enclosed report provides the results of an Asbestos and Hazardous Materials Survey conducted on May 5, 2008 at Bridge #90556 located on CR 152 over the Maple River in Sterling Center Township, Minnesota. Braun Intertec Corporation (Braun Intertec) was authorized by you to perform this work on August 30, 2008.

All services were performed in accordance with our General Services agreement with Blue Earth County Highway Department. If you have any questions or need further assistance, please call Jim Doten at 507.345.4913.

Sincerely,

BRAUN INTERTEC CORPORATION

James E. Doten, PG
Project Scientist

Gregg D. Kruse
Associate Principal

Attachments:
Asbestos and Hazardous Materials Survey Report

asb1.doc

Table of Contents

Tables

Appendices

A. Introduction

A.1 Purpose of Survey

This report presents the results of a hazard survey for asbestos-containing materials (ACM), mercury-containing lights, lead paint, and other hazard material/special waste concerns at the existing Bridge #90556 located on County Road (CR 152) over the Maple River in Sterling Center Township, Minnesota. Braun Intertec Corporation (Braun Intertec) was authorized to perform this work on April 28, 2008 by Mr. Alan Forsberg of the Blue Earth County Highway Department.

It is our understanding that Blue Earth County Highway Department has plans for demolishing the bridge and wishes to identify the extent of environmental concerns prior to bridge demolition. The scope of our services was limited to:

- Visually examine accessible areas and identify the locations of suspect ACM and lead containing paint.
- Collecting representative bulk samples of materials suspected of containing asbestos. Examples of materials to collected included caulks, tars, and waterproofing.
- In-situ analysis of paint for lead content using a portable x-ray fluorescence (XRF) field instrument.
- Analyzing bulk samples by polarized light microscopy analysis.
- Estimating quantities of identified ACM and damaged lead paint.
- Conducting a hazardous materials survey to identify miscellaneous materials that may require special handling and/or disposal per local and state regulations.
- Issuing a final report documenting the above findings.

A.2 Records Review

As-built drawings of the bridge were not available for review.

B. Field Activities

B.1. Asbestos Sampling

On May 5, 2008, Braun Intertec conducted an Asbestos and Hazardous Materials Survey of Bridge #90556. Braun Intertec collected four samples for asbestos analysis. Sample description, location,

and results are summarized in Table 1. The asbestos laboratory analytical report and chain-of-custody documentation are included in Appendix B.

The bridge is constructed of a steel span with treated timber support piers and treated timber wings. The abutments are constructed of stone. The decking consists of treated timber with an asphalt wear surface. The wear surface was extremely worn. Photographs taken of the bridge during the field inspection are included in Appendix C.

B.2. Lead Paint Analysis

During the survey, Braun Intertec identified peeling paint on the steel guardrails. Braun Intertec collected a sample of the deteriorated paint. Results of our analysis are summarized in Table 2.

B.3. Hazardous Materials Survey

Braun Intertec conducted an assessment of Bridge #90556 to identify miscellaneous materials that may require special handling and/or disposal per local and state regulations. The following miscellaneous materials were observed at or near the bridge:

- 480-linear feet creosote treated timber wing piles.
- 240-linear feet creosote treated timber pier piles.
- 150-linear feet creosote treated abutment caps.
- 16-cubic feet creosote treated pier cap.
- 1,800-square feet creosote treated planking in the bridge deck.
- 240-square feet creosote treated planking in wings.
- 500 square feet creosote treated planking in the pier.

C. Conclusions/Recommendations

C.1. Asbestos Considerations

Results of the May 5, 2008 asbestos sampling activities identified no asbestos-containing materials at Bridge #90556:

This survey is limited to the bridge structure itself. Possible ACM may be located beyond the bridge boundaries and may be encountered during bridge construction activities. These materials may include asbestos transite utility conduits and asbestos-containing felt under bituminous surfaces. If

these materials or any other suspect materials are encountered during construction activities, they should be assumed to contain asbestos unless proven otherwise by sampling.

Any contractors or other personnel conducting work at Bridge #90556 should be notified of the possible presence of asbestos and its location prior to conducting any work. Also, any ACM scheduled to be impacted should be properly removed prior to construction activities. Minnesota regulations require all asbestos removal to be conducted by a licensed, Minnesota asbestos abatement contractor using certified workers under the direction of a certified supervisor. A 10-day notification to the Minnesota Pollution Control Agency (MPCA) and Minnesota Department of Health (MDH) may be necessary prior to any abatement activities. In addition, a 10-day notification to the MPCA will be required prior to bridge demolition.

C.2. Lead Considerations

An assessment of the paint on the guardrails indicated that the paint is in poor condition. Laboratory analysis of the paint indicates that the paint is lead containing. Furthermore, this paint is considered lead-based by Environmental Protection Agency (EPA), MPCA, and MDH definitions as paint with equal to or greater than 1.0 mg/cm^2 or 0.5 percent lead by weight.

Any damaged and delaminating lead-containing and lead-based paint should be removed or stabilized by a trained professional prior to construction activities. Lead paint and lead coatings can remain; however, the material should be kept in good condition.

The Occupational Safety and Health Administration (OSHA) regulate the demolition, salvage, removal, encapsulation, and other activities which can potentially expose workers to lead paint or lead-containing coatings (29 CFR 1910.62). The OSHA standards apply to all paint and other coatings containing lead in any detectable concentration. These standards, including exposure monitoring, will apply to any employees conducting work activities at the structure that will impact any paint (i.e. welding, cutting, abrading). It is recommended that any paint at the structure that is scheduled to be impacted be removed prior to construction activities.

C.2. Other Considerations

Handling, recycling, and/or disposal of special wastes/hazardous materials should be conducted prior to construction activities according to requirements specific to each waste material. Certain special/hazardous materials may not be accessible prior to demolition. In this case, special handling techniques may be required to access and properly remove the materials.

D. Methodology

D.1. Asbestos Sampling

The personnel who performed the asbestos survey and sampling have completed, at a minimum, an EPA-approved training course in Asbestos Inspection, and the applicable refresher training courses.

Bulk asbestos analysis was conducted in accordance with the Environmental Protection Agency's (EPA) Method 40 CFR, Chapter 1, Part 763, Subpart F, Appendix A (7/1/87 Edition). Bulk samples are retained at our laboratory for 60 days and then disposed of unless instructed otherwise. Detailed quality control information is available upon request.

D.1. Lead Paint Analysis

The paint sample was analyzed in our AIHA accredited laboratory in accordance with EPA Method 6010B. Samples are retained at our laboratory for 60 days and then disposed of unless instructed otherwise. Detailed quality control information is available upon request.

E. Signatures

I, the undersigned, do hereby certify that I am an accredited Asbestos Building Inspector in the State of Minnesota. A photocopy of my current asbestos inspector certificate is attached in Appendix D.

Prepared by:

Signature: _____ Date: 27 May 08

James E. Doten, PG
Principal Scientist

Reviewed by:

Signature: _____ Date: 27 May 08

Gregg D. Kruse
Associate Principal

Table 1

Asbestos Analysis Summary

Bridge #90556, CR 152 over the Maple River

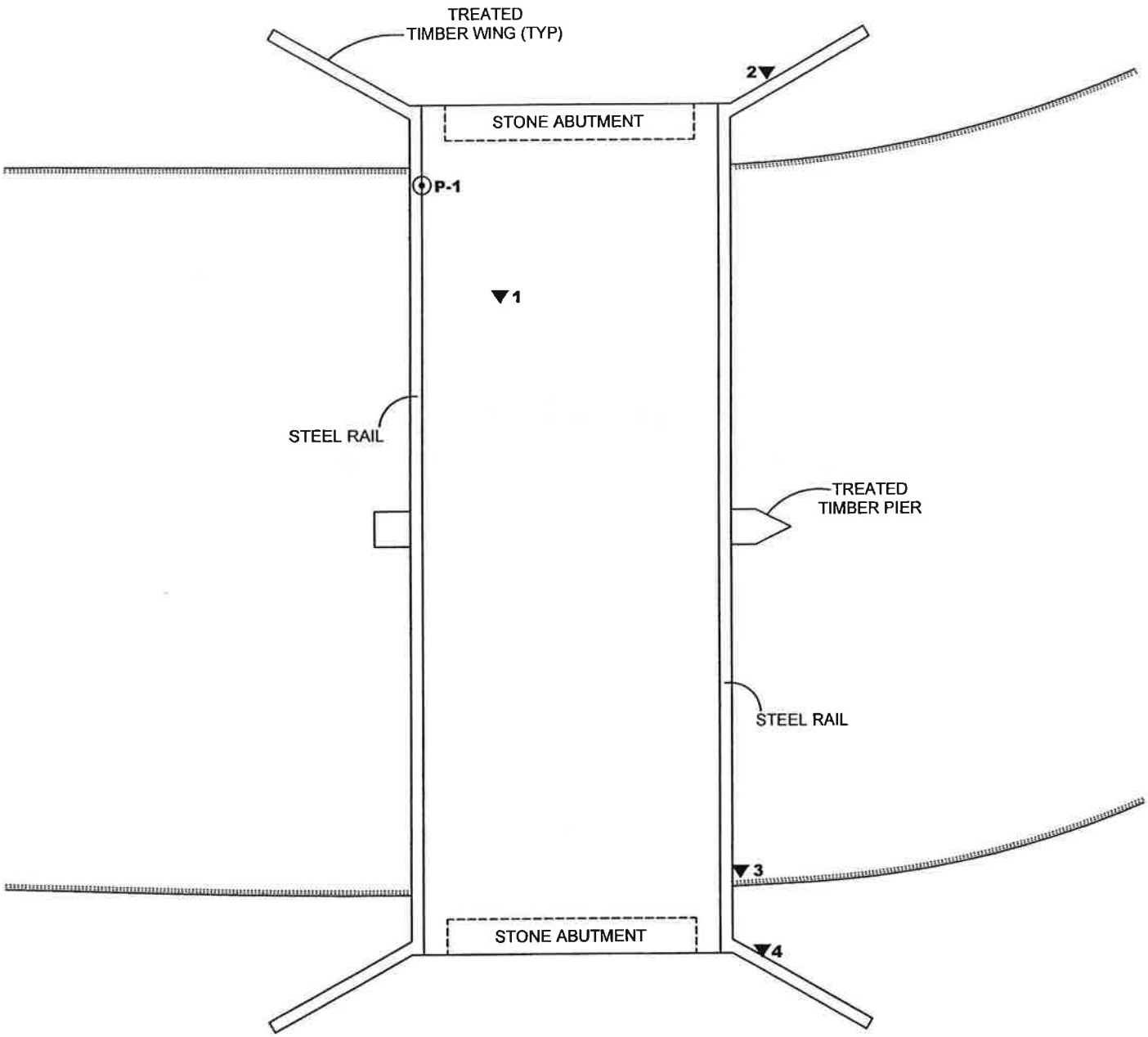
Sterling Center Township, Minnesota

Material Description	Material Location	Sample #s	Approximate Quantity	Friable	Condition	Asbestos %
Black granular tarry	Northeast Wing	1	15 square feet	No	Good	None detected
Black fibrous granular tarry	Bridge Deck	2	10 square feet	No	Poor	None detected
Black granular material	Southeast Steel Span	3	5 square feet	No	Poor	None detected
Black granular tarry	Southeast Wing	4	100 square feet	No	Poor	None detected

Table 2
Lead Paint Analysis Summary
Bridge #90556, CR 152 over The Maple River
Sterling Center Township, Minnesota

Material Description	Material Location	Sample #s	Condition	Lead (% weight)
Painted steel	Guardrails and span	P-1	Poor	14

Appendix A
Bridge Drawings



▼ **DENOTES APPROXIMATE LOCATION OF ASBESTOS SAMPLE**

⊙ **DENOTES APPROXIMATE LOCATION OF LEAD SAMPLE**

Sheet: of
Fig:

Project No:	MA0801542
Drawing No:	MA0801542
Scale:	NONE
Drawn By:	BJB
Date Drawn:	5/7/08
Checked By:	JED
Last Modified:	5/7/08

ASBESTOS AND LEAD SAMPLING LOCATION SKETCH
ASBESTOS AND REGULATED WASTE ASSESSMENT
BRIDGE #90556 - COUNTY ROAD 152
BLUE EARTH COUNTY
STERLING CENTER, MINNESOTA

BRAUN INTERTEC
11001 Hampshire Avenue So
Minneapolis, MN 55438
PH. (952) 995-2000
FAX (952) 995-2020

Appendix B
Asbestos Laboratory Report

BRAUN INTERTEC

Braun Intertec Corporation
11001 Hampshire Avenue S.
Minneapolis, MN 55438

Phone: 952.995.2000
Fax: 952.995.2020
Web: braunintertec.com

Mr. Jim Doten
Braun Intertec-Mankato
153 Chestnut Street
Mankato, MN 56001

May 13, 2008

Work Order #: 0802399

RE: Bridge #90556

MA-08-01542

Dear Jim Doten:

Bulk Asbestos Analysis Report

The microscopy department of Braun Intertec Corporation received your analytical request on May 06, 2008. The objective of this analysis was to determine the presence of asbestos using polarized light microscopy (PLM) and to determine the percent of asbestos and non-asbestos fibrous components by calibrated visual area estimation. Analytical results are summarized on the following laboratory report.

Methodology

Bulk asbestos analysis is conducted in accordance with the Environmental Protection Agency's (EPA) methods 40 CFR, Part 763, Ch. 1, Subpart F, Appendix A (7-1-87 Edition) and EPA/600/R-93/116. All analyses are in compliance with the quality control procedures specified by the methods. All samples are examined for homogeneity. If a sample contains more than one layer, each layer is analyzed individually. Total fibrous content is calculated for joint compound/wallboard systems by combining layer results according to their percentages of the total sample. Detailed quality control information is available upon request.

Remarks

Braun Intertec is accredited by the National Institute of Standards and Technology's (NIST), National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods for bulk asbestos identification under Accreditation Number 101234. This report in no way constitutes or implies product certification, approval or endorsement by NVLAP or any other agency of the U.S. Government. This test report relates only to the items submitted for analysis.

NVLAP®
Lab code: 101234

BRAUN INTERTEC

Braun Intertec Corporation
11001 Hampshire Avenue S.
Minneapolis, MN 55438

Phone: 952.995.2000
Fax: 952.995.2020
Web: braunintertec.com

May 13, 2008

Work Order #: 0802399

Samples are retained at our laboratory for a period of 30 days and will be disposed of unless otherwise instructed by the client.

We appreciate your decision to use Braun Intertec Corporation for this project. We are committed to being your vendor of choice to meet your analytical needs.

If you have any questions please contact me at 952-995-2688.

Sincerely,

BRAUN INTERTEC CORPORATION

Steve Felton

Project Manager

Sample No: 0802399-01 Client ID: 1- Abutment

Macroscopic Description	No. of Layers and Layer Designator	Percent of Total Sample	Non-Fibrous Components*	Other Fibrous Non-Asbestos Content Total or Layer %	Footnotes	Asbestos Content Total or Layer %	Footnotes	Analytical Date
Black granular tarry	1	100	1,3,8	None Detected		None Detected		05/12/08

Sample No: 0802399-02 Client ID: 2 - Deck Coating

Macroscopic Description	No. of Layers and Layer Designator	Percent of Total Sample	Non-Fibrous Components*	Other Fibrous Non-Asbestos Content Total or Layer %	Footnotes	Asbestos Content Total or Layer %	Footnotes	Analytical Date
Black fibrous granular tarry	1	100	1,3,8	Cellulose 10		None Detected		05/12/08

Sample No: 0802399-03 Client ID: 3 - Bridge Coating

Macroscopic Description	No. of Layers and Layer Designator	Percent of Total Sample	Non-Fibrous Components*	Other Fibrous Non-Asbestos Content Total or Layer %	Footnotes	Asbestos Content Total or Layer %	Footnotes	Analytical Date
Black granular material	1	100	1,3,4	Cellulose <1		None Detected		05/12/08

Sample No: 0802399-04 Client ID: 4 - Timber Coating

Macroscopic Description	No. of Layers and Layer Designator	Percent of Total Sample	Non-Fibrous Components*	Other Fibrous Non-Asbestos Content Total or Layer %	Footnotes	Asbestos Content Total or Layer %	Footnotes	Analytical Date
Black granular tarry	1	100	1,3,4,8	Cellulose <1		None Detected		05/12/08

Footnotes and Definitions

< Less Than
> Greater Than

*** Key to Non-Fibrous Components**

1 = Rock/Mineral fragments	5 = Diatoms	9 = Vinyl	13 = Spores/Pollen
2 = Mica/Vermiculite	6 = Perlite	10 = Foam/Rubber	14 = Foil
3 = Binders	7 = Adhesive/Mastic	11 = Paint	
4 = Opaques	8 = Tar	12 = Other	

For Braun Intertec Use Only
Laboratory Work Order No. 0802399

BRAUN INTERTEC
Braun Intertec Corporation
11001 Hampshire Ave. S
Minneapolis, MN 55438

REQUEST FOR LABORATORY ANALYTICAL SERVICES

Bottle orders and sampling inquires:
labservices@braunintertec.com
Phone: 952-995-2600 Fax: 952-995-2601

IMPORTANT
Date Results Requested: Std
Time
Rush Charges Authorized? ___ Yes ___ No
Rush / Quote #

Page 1 of 1

REPORT RESULTS TO
Contact Name: Jim Doten
Company: Braun Intertec
Mailing Address: 153 Chestnut St
City, State, Zip: Mankato, MN 56001
Telephone #: 507.345.4913 Fax #: 507.345.5042
E-mail: jdoten@braunintertec.com

Project ID/Name: Bridge #90556
P.O. #/Project #: MA-08-01542

SEND INVOICE TO
Contact Name | Company
Address
City, State, Zip
Telephone # | Fax #

Special Instructions and/or Specific Regulatory Requirements:
(method, limit of detection, petroleum, reporting units)

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request)

Site Location (State): MN

LAB ID#	CLIENT SAMPLE IDENTIFICATION (IDs must be unique)	DATE SAMPLED	TIME SAMPLED	MATRIX/MEDIA	VOLUME/AREA (specify units)	Number of Containers	Metals Field Filtered Y/N	PLM	LEAD	FOR LAB USE ONLY
01	1 - ABUTMENT	4/5/08	2:00	SOLID				X		
02	2 - DECK COATING		2:20					X		
03	3 - BRIDGE COATING		2:35					X		
04	4 - TIMBER COATING		2:50					X		
	P-1 RAILING		2:55	PAINT					X	

CHAIN OF CUSTODY
Collected by: (Print) JAMES DOTEN
Collector's Signature: [signature]
Relinquished by: [signature] Date/Time 6MAY08 1335
Received by: Date/Time
Relinquished by: Date/Time
Received Contents Not Verified: [signature] Date/Time 5-6-08 13:37
Custody Seal Intact ☐ Yes ☐ No ☒ N/A ☒ Hand Delivered by Client
Received Contents Verified Date/Time
On Ice ☐ Yes ☒ No
Temp Blank ☐ Yes ☒ No
Comments:
Temp. 22.6 °C

Form # CS02.03 F:\Groups\QA-QC\Forms\labservices\COC\CS02 Effective Date: 10-10-07

BRAUN
INTERTEC

Braun Intertec Corporation
11001 Hampshire Avenue S.
Minneapolis, MN 55438

Phone: 952.995.2000
Fax: 952.995.2020
Web: braunintertec.com

Mr. Jim Doten
Braun Intertec-Mankato
153 Chestnut Street
Mankato, MN 56001

May 15, 2008

Work Order: 0802398

RE: Bridge #40556
MA-08-01542

Dear Jim Doten:

Braun Intertec Corporation received samples for the project identified above on May 06, 2008. Analytical results are summarized in the following report.

All routine quality assurance procedures were followed, unless otherwise noted.

Where possible, the samples will be retained by the laboratory for 14 days following issuance of the initial final report. The samples will be disposed of or returned at that time.

We appreciate your decision to use Braun Intertec Corporation for this project. We are committed to being your vendor of choice to meet your analytical chemistry needs.

If you have any questions please contact me at the above phone number.

Sincerely,
BRAUN INTERTEC CORPORATION

William R. Dahl
Senior Scientist

AIHA ID# 101103

BRAUN
INTERTEC

11001 Hampshire Ave. S.
Minneapolis, MN 55438
952.995.2000 Phone
952.995.2020 Fax

Braun Intertec-Mankato	Client Ref: Bridge #40556	Work Order #: 0802398
153 Chestnut Street	Client Contact: Mr. Jim Doten	Project Mgr: William R. Dahl
Mankato, MN 56001	PO Number: MA-08-01542	Account ID:

Qualifiers and Abbreviations

COC	Chain of Custody
MRL	Method Reporting Limit
ppm	Parts per million in Air
NA	Not Applicable
NR	Not Reported
%Rec	Percent Recovery
RPD	Relative Percent Difference

BRAUN
INTERTEC

11001 Hampshire Ave. S.
Minneapolis, MN 55438
952.995.2000 Phone
952.995.2020 Fax

Braun Intertec-Mankato	Client Ref: Bridge #40556	Work Order #: 0802398
153 Chestnut Street	Client Contact: Mr. Jim Doten	Project Mgr: William R. Dahl
Mankato, MN 56001	PO Number: MA-08-01542	Account ID:

SAMPLE SUMMARY

Sample ID	Laboratory ID	Matrix	Air Volume (L) / Time (Min)	Date Sampled	Date Received
P-1 Railing	0802398-01	Paint		04/05/08 02:55	05/06/08 13:37

BRAUN
INTERTEC

11001 Hampshire Ave. S.
Minneapolis, MN 55438
952.995.2000 Phone
952.995.2020 Fax

Braun Intertec-Mankato	Client Ref: Bridge #40556	Work Order #: 0802398
153 Chestnut Street	Client Contact: Mr. Jim Doten	Project Mgr: William R. Dahl
Mankato, MN 56001	PO Number: MA-08-01542	Account ID:

P-1 Railing

0802398-01 (Paint)

4/5/08 2:55

Metals

Analyte	Result	MRL	Units	Dilution	Prepared	Analyzed	Method	Notes
Lead	**14**	0.50	% Wt	50	5/12/08	5/13/08	EPA 6010B	

BRAUN
INTERTEC

11001 Hampshire Ave. S.
Minneapolis, MN 55438
952.995.2000 Phone
952.995.2020 Fax

Braun Intertec-Mankato	Client Ref: Bridge #40556	Work Order #: 0802398
153 Chestnut Street	Client Contact: Mr. Jim Doten	Project Mgr: William R. Dahl
Mankato, MN 56001	PO Number: MA-08-01542	Account ID:

For Braun Intertec Use Only — Laboratory Work Order No.: 0802398

BRAUN INTERTEC
Braun Intertec Corporation
11001 Hampshire Ave. S
Minneapolis, MN 55438

REQUEST FOR LABORATORY ANALYTICAL SERVICES

Bottle orders and sampling inquiries:
labservices@braunintertec.com
Phone: 952-995-2600 Fax: 952-995-2601

IMPORTANT
Date Results Requested: Std
Time
Rush Charges Authorized? ___ Yes ___ No
Rush / Quote #

Page 1 of 1

REPORT RESULTS TO
Contact Name: JIM DOTEN
Company: BRAUN INTERTEC
Mailing Address: 153 CHESTNUT ST
City, State, Zip: MANKATO, MN 56001
Telephone #: 507.345.4913 Fax #: 507.345.5072
E-mail: jdoten@braunintertec.com

Project ID/Name: BRIDGE #40556
P.O. #/Project #: MA-08-01542

SEND INVOICE TO
Contact Name / Company
Address
City, State, Zip
Telephone # / Fax #

Special Instructions and/or Specific Regulatory Requirements:
(method, limit of detection, reporting units)

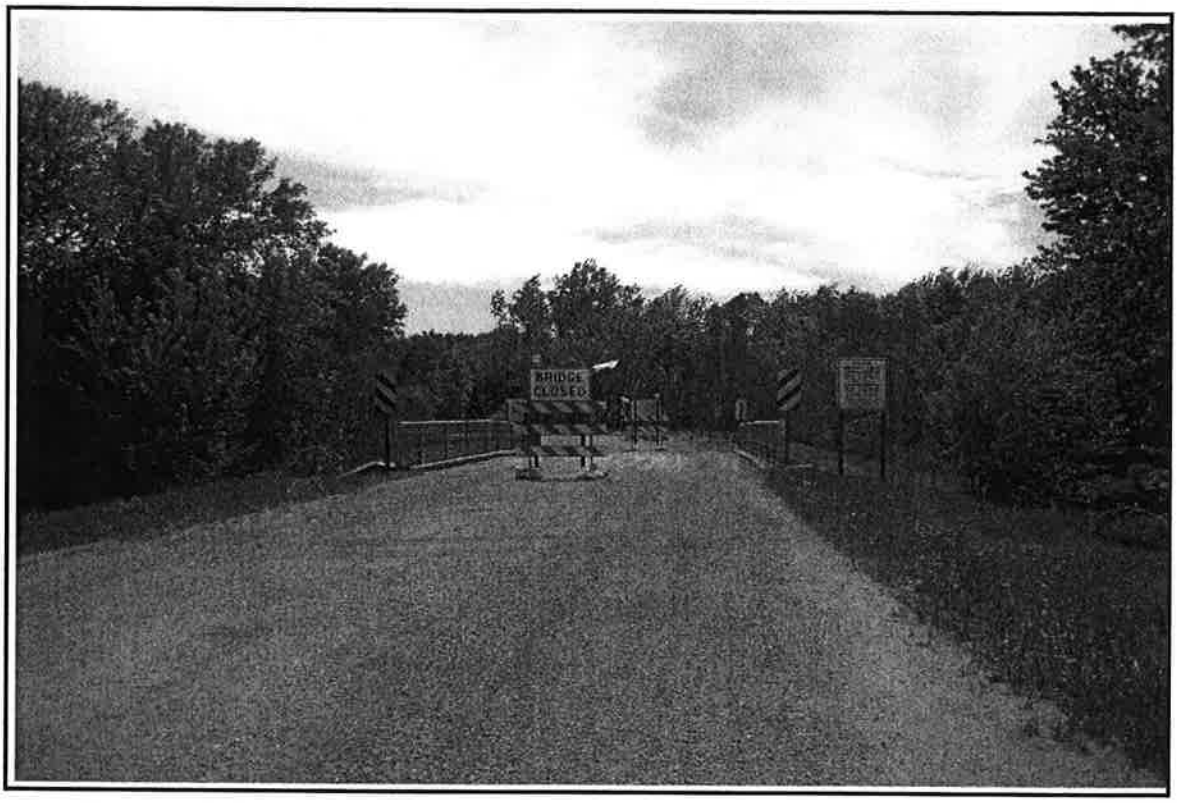
ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request)

LAB ID#	CLIENT SAMPLE IDENTIFICATION (ID's must be unique)	DATE SAMPLED	TIME SAMPLED	MATRIX/ MEDIA	VOLUME/AREA (specify units)	Number of Containers	Metals Field Filtered Y/N	Site Location (State): MN	PLM	LEAD	FOR LAB USE ONLY
	1 - ABUTMENT	4/15/08	2:00	SOLID					X		
	2 - DECK CUTTING	"	2:20	"					X		
	3 - BRIDGE CUTTING	"	2:35	"					X		
	4 - TIMBER CUTTING	"	2:50	"					X		
-01	P-1 RAILING	"	2:55	PAINT						X	

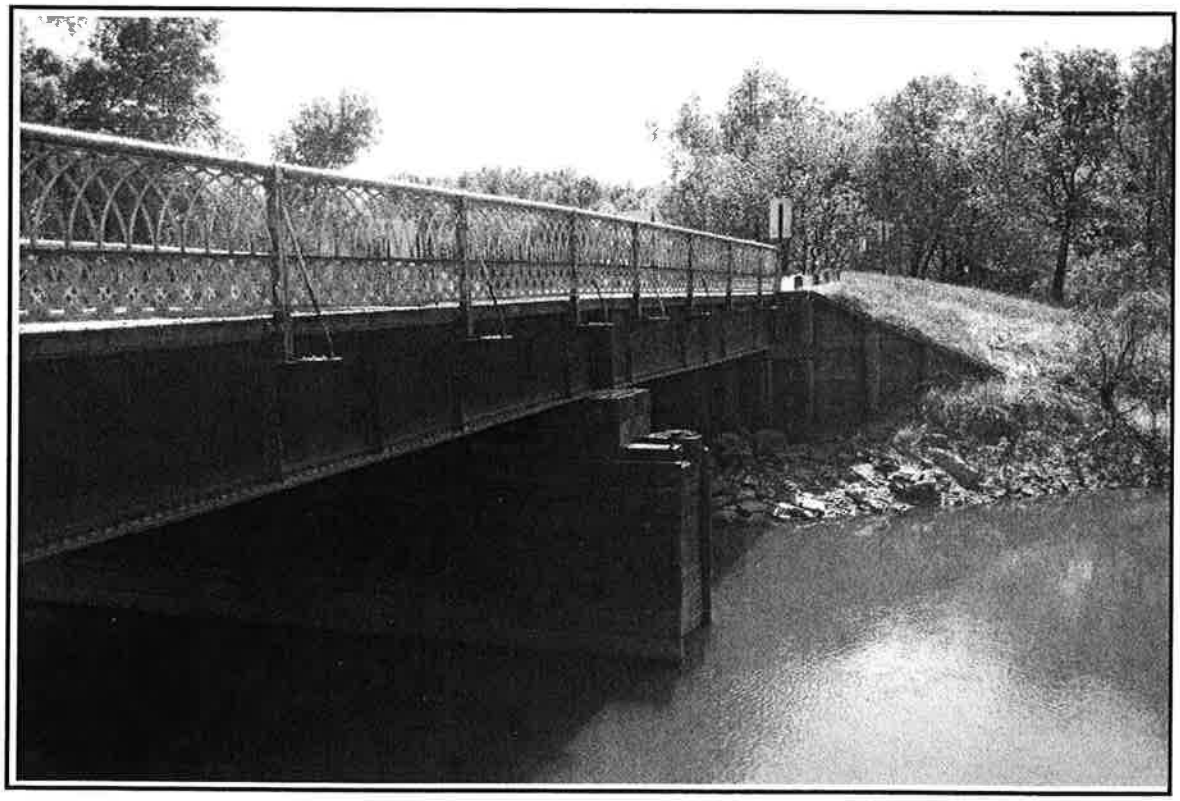
CHAIN OF CUSTODY
Collected by: (Print) JAMES DOTEN — Collector's Signature:
Relinquished by: — Date/Time 4/16/08 1335 — Received by: — Date/Time
Relinquished by: — Date/Time — Received Contents Not Verified: — Date/Time 5-6-08 13:37
Custody Seal Intact ☐ Yes ☐ No ☒ N/A ☒ Hand Delivered by Client
On Ice ☐ Yes ☒ No — Received Contents Verified: — Date/Time
Temp Blank ☐ Yes ☒ No — Comments:
Temp: 22.6 °C

Form # CS02-03 F:\Groups\QA QC\Forms\Instructions\COC CS02 Effective Date 10.10.07

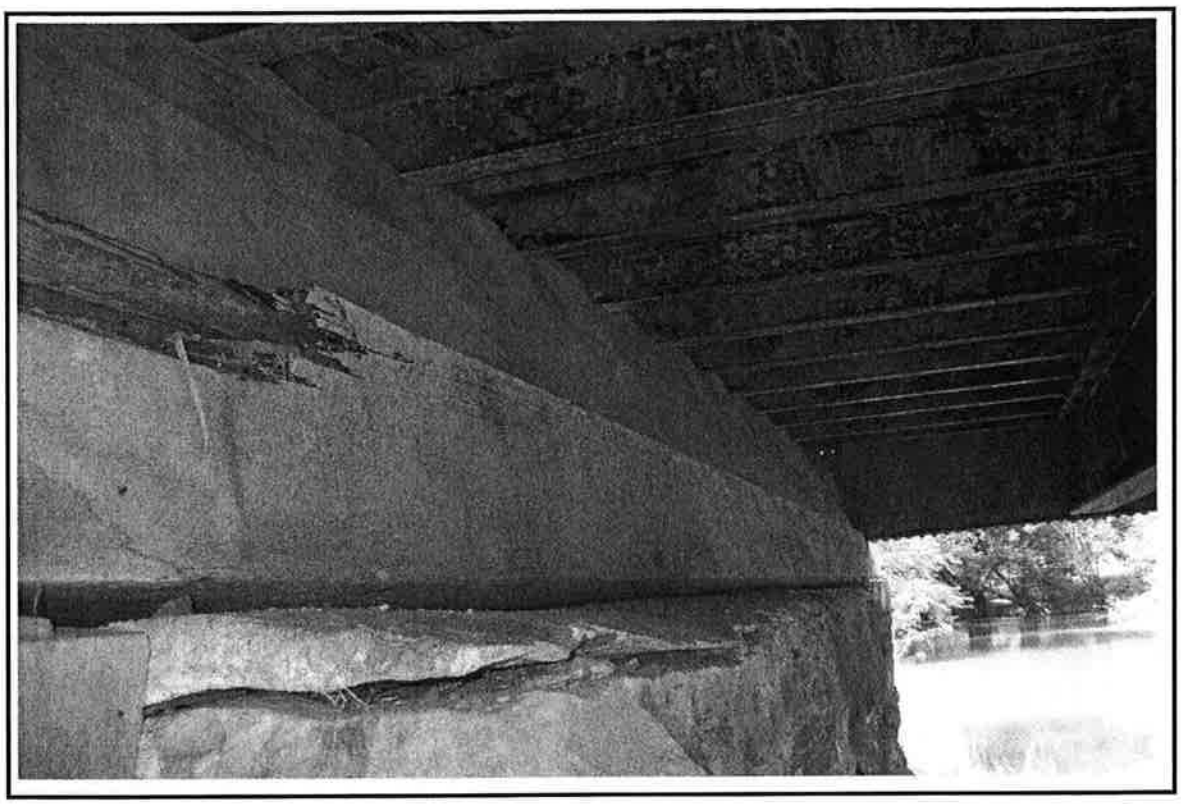
Appendix C
Bridge Photographs



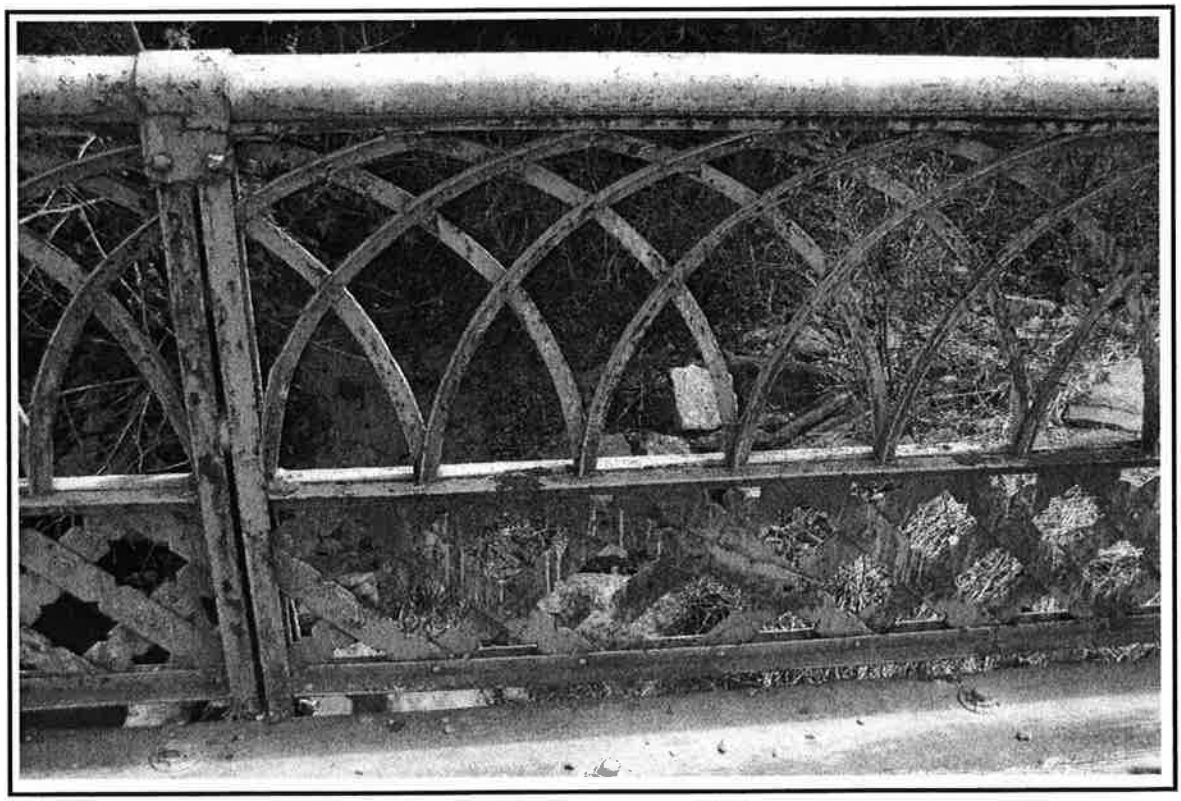
Photograph # 1
Date: May 5, 2008
Direction: South
Subject: View of the Bridge.



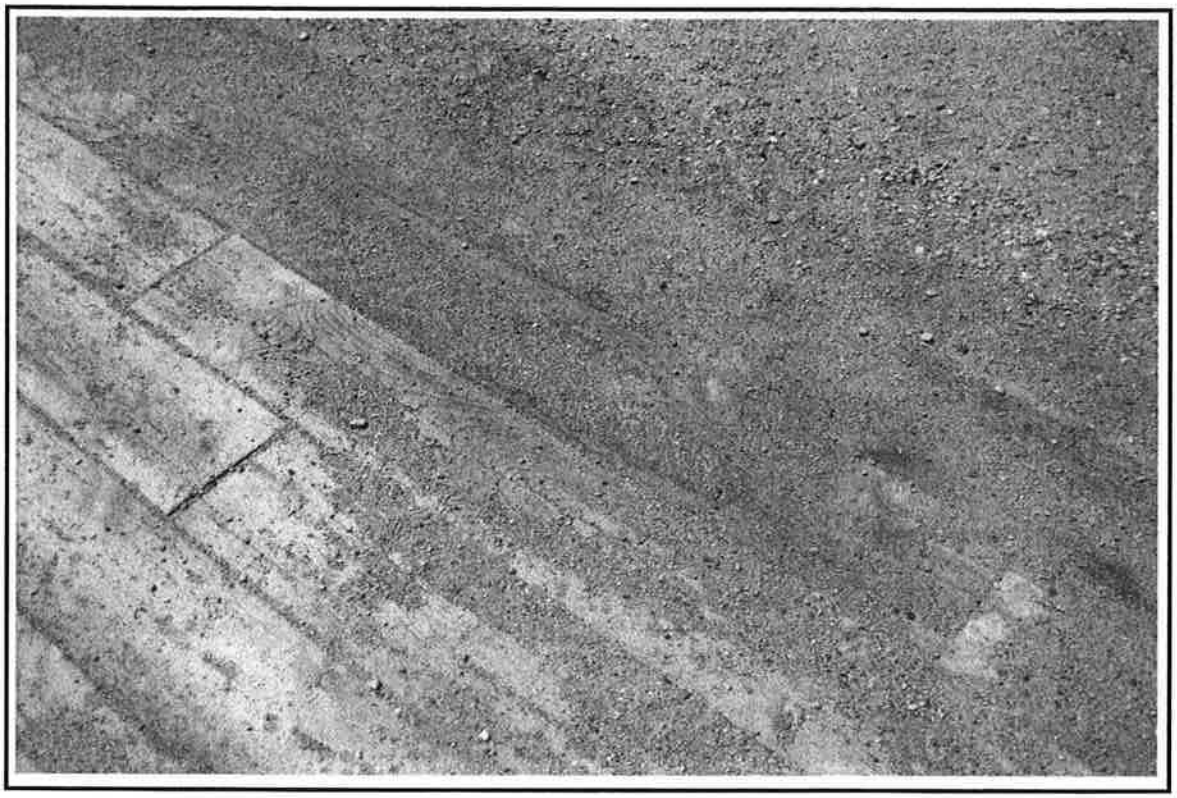
Photograph # 2
Date: May 5, 2008
Direction: South
Subject: View pier and wing.



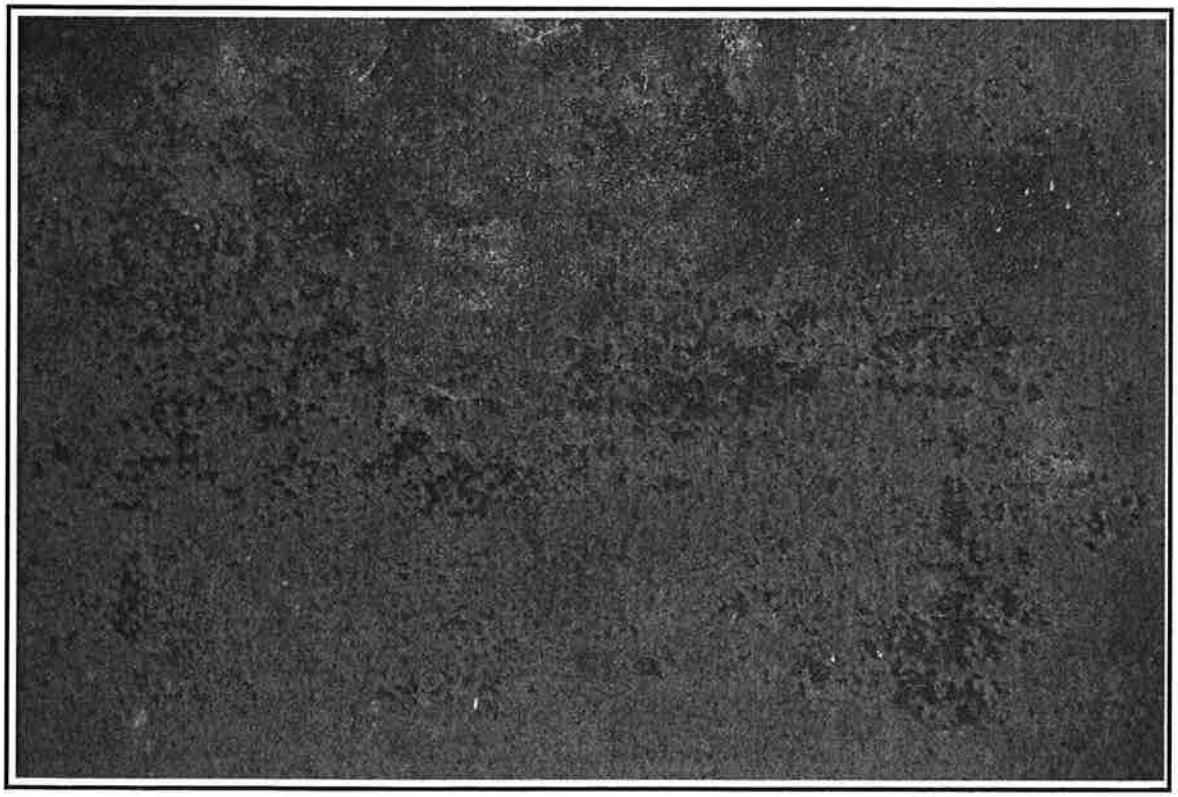
Photograph # 3
Date: May 5, 2008
Direction: West
Subject: View of abutment, cap and deck.



Photograph # 4
Date: May 5, 2008
Direction: East
Subject: View of worn paint on guardrail



Photograph # 5
Date: May 5, 2008
Direction: North
Subject: View of worn bituminous on deck.



Photograph # 6
Date: May 5, 2008
Direction: West
Subject: View of coating on span.

Appendix D
Asbestos Certifications

MDH

ASBESTOS INSPECTOR

Certified by:
State of Minnesota
Department of Health
Expires: 05/24/2009

James E Doten
157 E Welcome Ave #7
Mankato, MN 56001

Director, Env. Health Div.

No AI10662 Issued: 05/15/2008

(2360) PLANT MIXED ASPHALT PAVEMENT

Gyratory Design Specification
February 1, 2010

This Specification requires the Contractor to provide a mix that complies with all of the design, production, and placement requirements of the specification. The Department does not make any guaranty or warranty, either express or implied, that compliance with one part of this specification guarantees that the Contractor will meet the other aspects of the specification.

2360.1 DESCRIPTION

This work consists of the construction of one or more pavement courses of hot plant mixed asphalt-aggregate mixture on the approved prepared foundation, base course or existing surface in accordance with the specifications and in conformity with the lines, grades, thicknesses and typical cross sections shown on the plans or established by the Engineer. Mixture design will be 2360 (gyratory) as described in the Special Provisions through the mixture designation.

A Mixture Designations

Mixture designations for asphalt mixtures contain the following information:

(1) The first two letters indicate the mixture design type:
SP = Gyratory Mixture Design
SM = Gyratory Mixture Design for Stone Matrix Asphalt (SMA)

(2) The third and fourth letters indicate the course:
WE = Wearing and Shoulder Wearing Course
NW = Non-Wearing Course

(3) The fifth letter indicates the maximum aggregate size*:
A = 1/2 inch [12.5mm], SP 9.5
B = 3/4 inch [19.0mm], SP 12.5
C = 1 inch [25.0mm], SP 19.0
D = 3/8 inch [9.5mm], SP 4.75
E = See provision for SMA design

(4) **For Gyratory Design**:
The sixth digit indicates the Traffic Level (ESAL's x 10^6)
The requirements for gyratory mixtures in this specification are based on the 20-year design traffic level of the Project expressed in Equivalent Single Axle Loads (ESAL's). The five traffic levels are shown below in Table 2360.1-A.

Table 2360.1-A
Traffic Levels

Traffic Level	20 Year Design ESAL's (1 x 10^6 ESAL's)
2[1]	< 1
3[2]	1 to < 3
4	3 to < 10
5	10 to ≤ 30
6	SMA

1 -- (AADT < 2300)
2 -- (2300< AADT <6000)

(5) The last two digits indicate the air void requirement:
40 = 4.0% for SP and SM Wear mixtures
30 = 3.0% for SP Non-Wear and Shoulder

(6) The letter at the end of the mixture designation identifies the asphalt binder grade:

Standard Grades	Specialty Grades
B = PG 58-28	A = PG 52-34
C = PG 58-34	H = PG 70-28
E = PG 64-28	
F = PG 64-34	
L = PG 64-22	

Ex: Gyratory Mixture Designation -- SPWEB540E (Design Type, Lift, Agg Size, Traffic Level, Voids, Binder)
Ex: SMA Mixture Designation -- SMWEE640H (Design Type, Lift, Agg Size, Traffic Level, Voids, Binder)

B **Minimum Lift thickness**
Minimum design recommended paving lift thickness based on maximum aggregate size are:

Aggregate Size D:	Minimum Lift thickness = 1/2 inch [12 mm]
Aggregate Size A:	Minimum Lift thickness = 1 inch [25 mm]
Aggregate Size B:	Minimum Lift thickness = 1 ½ inch [40 mm]
Aggregate Size C (for non-wear only):	Minimum Lift thickness = 2 ½ inch [65 mm]

2360.2 MATERIALS

A Aggregate

A1 General

The aggregate shall consist of sound, durable particles of gravel and sand, crushed stone and sand, or combinations thereof. It shall be free of objectionable matter such as metal, glass, wood, plastic, brick, rubber, and any other material having similar characteristics. Coarse aggregate shall be free from coatings of clay and silt to the satisfaction of the Engineer.

The Contractor shall not compensate for the lack of fines by adding soil materials such as clay, loam, or silt. Overburden shall not be blended into the asphalt aggregate.

Each different material (source, class, kind, or size) shall be fed at a uniform rate from its storage unit. An individual source, class, type, or size of material shall not be stockpile blended with another source, class, type or size of material.

A2 Classification

The aggregate shall conform to one of the following classifications. The class of aggregate to be used shall be the Contractor's option unless otherwise specified in the Contract.

A2a Class A

Class A aggregate shall consist of crushed igneous bedrock (specifically; basalt, gabbro, granite, gneiss, rhyolite, diorite and andosite) and rock from the Sioux Quartzite Formation. Other igneous or metamorphic rock may be used with specific approval of the Engineer. Class A materials may contain no more than 4.0% non-Class A aggregate. This recognizes the fact that some quarries may contain small pockets of non-Class A material within that source. Intentional blending or addition of non-Class A material is strictly prohibited!

A2b Class B

Class B aggregate shall consist of crushed rock from all other bedrock sources such as carbonate and metamorphic rocks. (Schist)

A2c Class C

Class C aggregate shall consist of natural or partly crushed natural gravel obtained from a natural gravel deposit.

A2d Class D

Class D aggregate shall consist of 100 percent crushed natural gravel. The crushed gravel shall be produced from material retained on a square mesh sieve having an opening at least twice as large as the Specification permits for the maximum size of the aggregate in the composite asphalt mixture. The amount of carryover (material finer than) the selected screen shall not exceed ten percent.

A2e Class E

Class E aggregate shall consist of a mixture of any two or more of the above classes of approved aggregate (A, B, and D). The use of Class E aggregate, as well as the relative proportions of the different constituent aggregates, shall be subject to the approval of the Engineer. The relative proportions of the constituent aggregates shall be accurately controlled either by the use of a blending belt approved by the Engineer prior to production or by separately weighing each aggregate during batching operations.

A2f Steel Slag

Steel slag may not exceed 25 percent of the mass of the total aggregate. Steel slag shall be free of metallics and other mill waste. Stockpiles will be accepted for use if the total expansion, determined by ASTM D4792, is less than 0.50%.

A2g Taconite Tailings (TT)

Taconite tailings shall be obtained from ore that is mined westerly of a north-south line located east of Biwabik, Mn (R15W-R16W); except that taconite tailings from ore mined in southwestern Wisconsin will also be permitted for use.

Approved taconite tailing sources are on file with the Department Bituminous Engineer.

A2h Recycled Asphalt Shingles (RAS)

RAS may be included in the mixture to a maximum of 5 percent of the total weight of mixture as shown in Table 2360.3-B2a. Either manufactured waste scrap asphalt shingles (MWSS) or tear-off scrap asphalt shingles (TOSS) may be included in the mixture. The percentage of RAS used will be considered part of the maximum allowable RAP percentage. Refer to Section 2360.2 G1 to select a virgin asphalt binder grade. The ratio of added new asphalt binder to total asphalt binder shall be 70% or greater ((added binder/total binder) x 100 >= 70). A minimum of 1 spotcheck per day per mixture blend is required to determine new added binder.

All RAS materials shall be processed to meet the following gradation requirements:

Gradation (% passing)

Sieve Size (inch [mm])	**(% passing)**
1/2 inch [12.5]	100
#4 [4.75]	90

To conduct the gradation testing, a 500-700 gram sample of processed shingle material is air dried and then dry sieved over the 1/2" and #4 sieves and then weighed.

Shingle asphalt binder content is to be determined by chemical extraction, MnDOT Lab Procedure 1851 or 1852.

An aggregate bulk specific gravity (Gsb) of 2.650 may be used in lieu of determining the shingle aggregate Gsb by Mn/DOT 1205 (AASHTO T84).

RAS shall not contain extraneous waste materials. Extraneous materials including, but not limited to, metals, glass, rubber, nails, soil, brick, tars, paper, wood, and plastics shall not exceed 0.5 percent by weight as determined on material retained on the No. 4 (4.75-mm) sieve. To conduct deleterious material testing, a 500-700 gram sample of processed shingle material is sieved on the #4 sieve and any extraneous waste material is picked and weighed.

RAS shall be stockpiled separate from other salvage material. Blending of RAS in a stockpile with other salvage material is prohibited. Blending of MWSS and TOSS is not allowed. Blending of a virgin sand material with the processed shingles, to minimize agglomeration of the shingle material, is allowed, but, the blended sand must be accounted for in the mixture design.

Before a Mixture Design Report for a particular mixture is authorized, the following shall be submitted, along with materials and paperwork required by 2360.3:

1. Certification, of the RAS, by the processor. Certification forms for both MWSS and TOSS are located on the Bituminous Office website at: www.dot.state.mn.us/materials/bituminous.html

A2i Crushed Concrete and Salvaged Aggregate

Crushed concrete is allowed as an aggregate source for up to 50 percent of the aggregate in non-wear mixtures. Crushed concrete is not allowed in wearing courses.

Salvaged aggregate is allowed as an aggregate source for up to 100 percent of the aggregate in wear and non-wear mixtures. All salvaged aggregate shall be stockpiled uniformly to limit variation in mixture properties. Salvaged aggregates shall meet quality and crushing requirements as specified herein.

A2j Sewage Sludge Ash (SSA)

Sewage sludge ash is allowed as an aggregate source in both wear and non-wear courses to a maximum of 5 percent of the total weight of mixture. Only SSA that meets the Tier II hazard evaluation criteria as approved by Mn/DOT's Office of Environmental Services, Environmental Analysis Section, will be allowed for use in the mixture.

Approved waste incinerator ash sources are on file with the Department Bituminous Engineer.

A3 Recycled Asphaltic Pavement Materials (RAP)

The combined RAP and virgin aggregate shall meet the composite coarse and fine aggregate angularity for the mixture being produced. RAP containing any objectionable material, i.e., road tar, metal, glass, wood, plastic, brick, fabric, or any other objectionable material having similar characteristics will not be permitted for use in the asphalt pavement mixture.

Asphalt binder content in the RAP shall be determined according to Mn/DOT Lab Manual Method 1851 or 1852.

B Manufactured Crushed Fines (-4 material)

All Class A, B, D, and E material that passes the #4 [4.75 mm] screen will be considered as crushed fines.

Manufactured Crushed Fines (-4 material) from Class C Aggregate. Produce manufactured crushed fines (-4 material) from a gravel source by passing the gravel over a selected screen, 3/8 inch [9.5 mm] or larger, prior to mechanical crushing. The material which passes the 3/8 inch [9.5 mm] screen shall not be incorporated into the manufactured crushed fines but may be used as it qualifies for natural sand. The amount of carryover (material finer than) the selected screen shall not exceed ten percent.

The material retained on the 3/8 inch [9.5 mm] screen shall be crushed. The material that passes the #4 [4.75 mm] screen, after crushing, will be considered as 100% crushed fines. Material retained on the #4 [4.75 mm] screen after crushing will not be counted as +4 crushing until tested.

C Quality Requirements

C1 Los Angeles Rattler Test..... AASHTO T96

The Los Angeles Rattler loss on the coarse aggregate fraction (material retained on the #4 [4.75 mm] sieve shall not exceed 40 percent for any individual source used within the mix. An aggregate proportion which passes the #4 [4.75 mm] sieve and exceeds 40 percent LAR loss on the coarse aggregate fraction is prohibited from use in the mixture.

C2 Soundness (Magnesium Sulfate) ..... AASHTO T104

The magnesium sulfate soundness loss at 5 cycles on the coarse aggregate fraction (material retained on the #4 [4.75 mm]) shall not exceed the following for any individual source used within the mix: *

a) No more than 14 % loss on the 3/4 inch [19 mm] to 1/2 inch [12.5 mm] and larger fractions.
b) No more than 18% loss on the 1/2 inch [12.5 mm] to 3/8 inch [9.5 mm] fraction.
c) No more than 23% loss on the 3/8 inch [9.5 mm] to #4 [4.75 mm] fraction.
d) No more than 18% for the composite loss. (Applies only if all three size fractions are tested).

* 1) If the composite requirement is met but one or more individual components do not, the source may be accepted if no individual component is more than 110% of the requirement for that component.

2) If each individual component requirement is met but the composite does not, the source may be accepted if the composite is no greater than 110% of the requirement.

Coarse aggregate that exceeds the requirements listed above shall not be processed for use as minus #4 [4.75 mm] material.

C3 Spall Materials and Lumps ..... Mn/DOT Laboratory Manual

Spall is defined as shale, iron oxide, unsound cherts, pyrite, highly weathered and/or soft phyllite and argillite (may be scratched with a brass pencil), and other materials having similar characteristics.

Lumps are defined as loosely bonded aggregations and clayey masses. If the percent of lumps measured in the stockpile or cold feed exceed the values listed below, asphalt production shall cease and compliance shall be determined by dry batching. This procedure may be repeated at any time at the discretion of the Engineer.

Maximum limits for Spall and lumps, expressed as percentages by mass, are listed in Table 2360.3-B2a.

C4 Insoluble Residue Test ..... Mn/DOT Laboratory Manual

If Class B carbonate material is used in the mix, the minus #200 [0.075 mm] sieve size portion of the insoluble residue shall not exceed 10 percent.

D Aggregate Restrictions

Class B carbonate aggregate restrictions are specified in Table 2360.3-B2a.

E Gradation Requirement

The coarse and fine aggregate shall be combined in such proportions to produce an asphalt mixture meeting all of the requirements defined in this specification and shall conform to the gradation as defined in Table 2360.2-E. Gradation testing shall be conducted in accordance with AASHTO T-11 (-#200 [-0.075 mm] wash) and T-27.

Table 2360.2-E
Aggregate Gradation Broad Bands
(% passing of total washed gradation)

Sieve Size (inch [mm])	A	B	C	D	E (SMA)
1 inch [25.0]			100		See SMA Provisions
3/4 inch [19.0]		100(1)	85-100		
1/2 inch [12.5]	100(1)	85-100	45-90		
3/8 inch [9.5]	85-100	35-90	-	100	
#4 [4.75]	25-90	30-80	30-75	65-95	
#8 [2.36]	20-70	25-65	25-60	45-80	
#200 [0.075]	2.0-7.0	2.0-7.0	2.0-7.0	3.0-8.0	

(1) The gradation broadband for the maximum aggregate size may be reduced to 97% passing for mixtures containing RAP, when the oversize material is suspected to come from the RAP source. The virgin material must remain 100% passing the maximum aggregate sieve size.

F Additives

An additive is any material added to an asphalt mixture or material, such as mineral filler, hydrated lime, asphalt additives, anti-strip, and similar products that do not have a specific pay item. When a Contract requires additives, compensation is included with the pay items for the appropriate mixture. If the Engineer directs the Contractor to incorporate additives, the compensation will be as Extra Work, at the unit price specified in the proposal. The Department will not compensate the Contractor for additives incorporated at the Contractor's option.

Additives will not be incorporated into the mixture without approval of the Engineer. Anti-foaming agents shall be added to asphalt cement at the manufacturer's recommended dosage rate. Mineral filler and hydrated lime may be added in a quantity not to exceed 5 percent and 2 percent, respectively, of the total mass of the aggregate. The combination of mineral filler and hydrated lime shall not exceed 5 percent of the total mass of aggregate. The Engineer will approve or disapprove methods for addition of additives.

F1 Mineral Filler 3145

F2 Hydrated Lime 3145

Hydrated lime used in asphalt mixtures shall meet the requirements of ASTM C977 and have a maximum of eight percent unhydrated oxides (as received basis). The method of introducing and mixing the hydrated lime and aggregate shall be subject to approval by the Engineer prior to beginning mixture production.

F3 Liquid Anti-Stripping Additive

When a liquid anti-strip additive is added to the asphalt binder, blending shall be completed before the asphalt binder is mixed with the aggregate. Liquid anti-strip additives that alter the asphalt binder, such that it fails to meet the Performance Grade (PG) requirements, shall not be used. Liquid anti-strip may be added by the supplier at the refinery or by the Contractor at the plant site. The company/supplier adding the additive shall be responsible for testing the binder/additive blend to ensure compliance with the AASHTO M 320, Standard Specification for Performance Graded Asphalt Binder. No paving will be allowed until the asphalt binder/additive blend has been tested and results show that binder/additive blend properties meet the criteria in Section 2360.2G. The testing shall be done in accordance with a Mn/DOT approved Asphalt Binder QC Plan. Requirements for the Asphalt Binder QC Plan are on file in the Bituminous Office.

The following requirements for HMA mixture and asphalt binder must also be met when liquid anti-strip is added at the HMA plant site.

Mixture Requirements at Design:

1) The Contractor must design the mixture with the same asphalt binder that will be supplied to the plant site. (Both Laboratory Mixture Design (Option 1) and Modified Mixture Design (Option 2).
2) The Contractor must provide documentation with either design option that includes Tensile Strength Ratio results with the liquid anti-strip dosed at the optimal rate. Documentation must include verification the binder/additive blend meets AASHTO M 320 at the optimal dose rate.

Contractor Production Testing Requirements for Asphalt Binder/Liquid Anti-Strip Blend:

1) The Contractor shall, on a daily basis, sample and test the asphalt binder/anti-strip blend. Testing of the blend can be by viscosity, penetration, or dynamic shear rheometer (DSR). When a polymer modified asphalt binder is specified, the Contractor shall use the DSR as the daily QC test.
2) The Contractor shall, on a weekly basis, send the Engineer and Mn/DOT Chemical Laboratory Director a weekly QC report summarizing the results of the daily testing as required in number 1.
3) The Contractor shall, on a bi-weekly basis, test the binder/anti-strip blend to ensure compliance with the AASHTO M 320, Standard Specification for Performance Graded Asphalt Binder (minimum 1/project). Test results shall be sent to the Engineer and Mn/DOT Chemical Laboratory Director.
4) In addition to the sampling requirements listed above, the Contractor shall obtain asphalt binder/anti-strip blend field verification samples according to 2360.4 E12.

Liquid Anti-Strip Additive Metering System:

1) The metering system shall include a liquid anti-strip flow meter in addition to an anti-strip pump. The flow meter shall be connected to the liquid anti-strip supply to measure and display only the anti-strip being fed to the asphalt binder.
2) The meter readout shall be positioned for convenient observation.
3) There shall be a means provided for comparing the flow meter readout with the calculated output of the anti-strip pump. See number 7.
4) The system shall display in units of gallons [liters] to the nearest gallon [liter] or in units of tons [metric tons] to the nearest 0.001 tons [0.001 metric tons], the accumulated anti-strip quantity being delivered to the mixer unit.
5) The system shall be calibrated and adjusted to maintain an accuracy of ± one percent error.
6) Calibration shall be required for each plant set-up prior to production of mixture.
7) The Engineer may require, on a daily basis, the Contractor "stick" the anti-strip tank at the end of the days production to verify anti-strip usage quantities.
8) The system shall provide for a convenient method for sampling the binder/anti-strip after blending has occurred.
9) Alternative blending and metering systems must be pre-approved by the Engineer

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G Asphalt Binder Material ..... AASHTO M 320

Asphalt binder material shall meet the requirements of PG asphalt binder testing tolerances, sampling rates, testing procedures, and acceptance criteria based on the most current Mn/DOT Technical Memorandum, titled "Inspection, Sampling, and Acceptance of Bituminous Materials." The PG asphalt binder cannot be modified with air blowing procedures unless the Department Bituminous Engineer approves it. The Contractor shall not use petroleum distillates such as fuel oil, diesel fuel or other fuels in the asphalt tanks. A statement shall be provided by the supplier for recommended laboratory mixing and compaction temperatures and field maximum mixing and compaction temperatures.

G1 Asphalt Binder Selection Criteria for All Mixtures with RAP

Specified PG Asphalt Binder Grade	RAP Percentage	
	≤ 20% RAP	> 20% RAP
PG XX-28 & PG 52-34	Use Specified Grade	Use Specified Grade
PG XX-34	Use Specified Grade	Use Blending Chart*

*The use of a blending chart, to verify compliance with the specified binder grade, is required when RAP is > 20%. Blending chart procedure is on file in the MnDOT Chemical Laboratory. Mn/DOT may take production samples for information/verification of compliance with the specified asphalt binder grade.

2360.3 MIXTURE DESIGN

A Mixture Design General

The asphalt mix may be designed using one of the following two Contractor trial mix design options as described in 2360.3B and 2360.3D. Review of mixture designs will be performed in the District Materials Laboratory where the Project is located. All mixture design test results, documentation, aggregate material samples, and mixture samples, as required by the trial mix design option, shall be submitted to the District Materials Laboratory where the Project is located (Department Bituminous Engineer in Metro area). Unless otherwise authorized by the District Materials Engineer, the addition of aggregates and materials not included in the original mixture submittal is prohibited.

It is the Contractor's responsibility to design a gyratory mixture in accordance with the most current AASHTO T-312 (Mn/DOT modified), the Asphalt Institute's Superpave Mix Design Manual SP-2 (2-hour short term aging period is used for volumetric), and the Mn/DOT Laboratory Manual such that it meets the requirements of this specification.

B Laboratory Mixture Design (Option 1)

To verify Laboratory Mixture Design compliance with these specifications, the Contractor shall submit mixture design test results and documentation as described in Section 2360.3C and the materials described below to the District Materials Laboratory where the Project is located (Department Bituminous Engineer in Metro area). The District Materials Engineer (Department Bituminous Engineer) will issue a Mixture Design Report when the mixture design has been successfully verified.

B1 Aggregate sample

At least 15 working days prior to the start of asphalt production, the Contractor shall submit aggregate samples for quality testing. An 80 pound [35 kg] sample of representative aggregate retained on the #4 sieve [4.75 mm] and a 35 pound [15 kg] sample of material passing the #4 sieve [4.75 mm]shall be submitted to

the District Materials Laboratory where the Project is located (Bituminous Engineer in Metro area). In addition to the preceding requirements the Contractor shall also submit an 80 pound [35 kg] sample of representative RAP material and/or a 10 pound [5 kg] sample of representative RAS material when the mixture includes asphaltic recycled materials. The Contractor shall provide 24 hour notice of intent to sample aggregates. These samples will be tested for quality of each source, class, type, and size of virgin and non-asphaltic salvage aggregate source used in the mix design. The Contractor shall retain a companion sample of equal size until a Mixture Design Report is issued. Quality requirements are defined in Section 2360.2C.

Aggregates that require the magnesium sulfate soundness test shall be submitted to the Department Bituminous Engineer or District Materials Engineer at least 30 calendar days prior to the start of asphalt production. Dispute resolution procedures for aggregate qualities are on file in the Bituminous Office.

B2 Mixture sample

At least 7 working days prior to the start of asphalt production, the Contractor shall submit in writing a proposed Job Mix Formula (JMF) for each combination of aggregates to be used in the mixture. The JMF will be reviewed in the District Materials Laboratory where the Project is located (Department Bituminous Engineer in Metro area). A Level II Quality Management mix designer must sign the proposed JMF. For each JMF submitted, the Contractor shall include test data to demonstrate conformance to mixture properties as specified in Table's 2360.3-B2b and 2360.3-B2c. The proposed JMF shall be submitted on forms approved by the Department. In addition, the Contractor shall submit an uncompacted mixture sample plus briquettes compacted at the optimum asphalt content and required compactive effort conforming to the JMF for laboratory examination and evaluation. Mixture sample size and number of compacted briquettes are as follows:

Table 2360.3-B2
Mixture Sample Requirements

Item	Gyratory Design
Un-compacted Mixture Sample Size	75 pounds [30 Kg]
Number of compacted briquettes	2

B2a Mixture Aggregate Requirements

The aggregate fractions shall be sized, graded, and combined in such proportions that the resulting mixture will meet the requirements listed in Section 2360.2-E and Table 2360.3-B2a shown below.

Table 2360.3-B2a
Mixture Aggregate Requirements

Aggregate Blend Property	Traffic Level 2	Traffic Level 3	Traffic Level 4	Traffic Level 5	SMA T. Level 6
20 year Design ESAL's	<1 million	1 - 3 million	3 - 10 million	10 – 30 million	See SMA Provisions
Min. Coarse Aggregate Angularity (ASTM D5821) (one face / two face), %- Wear (one face / two face), %- Non-Wear	30/- 30/-	55 / - 55 / -	85 / 80 60/ -	95 / 90 80 / 75	-
Min. Fine Aggregate Angularity (FAA) (AASHTO T304, Method A) %- Wear %-Non-Wear	40(2) 40(2)	42 40	44 40	45 40	-
Flat and Elongated Particles, max % by weight, (ASTM D 4791)	-	10 (5:1 ratio)	10 (5:1 ratio)	10 (5:1 ratio)	-
Min. Sand Equivalet (AASHTO T 176)	-	-	45	45	-
Max. Total Spall in fraction retained on the #4 [4.75mm] sieve – Wear Non-Wear	5.0 5.0	2.5 5.0	1.0 2.5	1.0 2.5	-
Maximum Spall Content in Total Sample – Wear Non-Wear	5.0 5.0	5.0 5.0	1.0 2.5	1.0 2.5	-
Maximum Percent Lumps in fraction retained on the #4 [4.75mm] sieve	0.5	0.5	0.5	0.5	-
Class B Carbonate Restrictions					
Maximum% -#4 [-4.75mm] Final Lift/All other Lifts	100/100	100/100	80/80	50/80	-
Maximum% +#4 [+4.75mm] Final Lift/All other Lifts	100/100	100/100	50/100	0/100	-
Max. allowable RAP percentage(1) Wear / Non Wear	30/40	30/30	30/30	30/30	-
Max. allowable scrap shingles–MWSS(2) Wear/Non Wear	5/5	5/5	5/5	5/5	-
Max. allowable scrap shingles –TOSS(2) Final Lift/All other Lifts	5/5	5/5	0/5	0/0	-

(1) When shingles are included as part of the allowable RAP percentage in Traffic Level 2, 3, 4, or 5 mixtures the ratio of added new asphalt binder to total asphalt binder shall be 70% or greater ((added binder/total binder) x 100 >= 70). A minimum of 1 spotcheck per day per mixture blend is required to determine new added binder.

(2) MWSS is manufactured waste scrap shingle and TOSS is tear-off scrap shingle.

B2b Mixture Requirements

Mixture evaluation will be based on the trial mix tests and the corresponding requirements listed in Table 2360.3-B2b and Table 2360.3-B2c.

Table 2360.3-B2b
Mixture Requirements

	Traffic Level 2	Traffic Level 3	Traffic Level 4	Traffic Level 5	SMA T. Level 6
20 year Design ESAL's	< 1 million	1 - 3 million	3 - 10 million	10 – 30 million	See SMA Provisions
Gyratory Mixture Requirements					
Gyrations for N_{design}	40	60	90	100	
%Air Voids at N_{design}, -- Wear %Air Voids at N_{design}, -- Non-Wear & All Shoulder	4.0 3.0	4.0 3.0	4.0 3.0	4.0 3.0	
Adjusted Asphalt Film Thickness, micron (μ), min	8.5	8.5	8.5	8.5	
Tensile Strength Ratio [(1)], min%	75[(2)]	75[(2)]	80[(3)]	80[(3)]	
Fines/Effective Asphalt	0.6 – 1.2	0.6 – 1.2	0.6 – 1.2	0.6 – 1.2	

(1) See Section 2360.4 E9. Use 6 inch [150mm] specimens.
(2) Mn/DOT Min = 65, [(3)] Mn/DOT Min = 70

B2c **Primary Control Sieve**

The primary control sieve is used to define coarse and fine graded mixtures. The determination of coarse and fine graded mixtures will be based on the percentage of material passing the #8 [2.365 mm] sieve as shown below in Table 2360.3-B2c.

Table 2360.3-B2c
Primary Control Sieve Table

Gradation	Fine Mixture % Pass #8 [2.36 mm]	Coarse Mixture % Pass #8 [2.36 mm]
A	> 47	≤ 47
B	> 39	≤ 39
C	> 35	≤ 35
D	-----	-----

B2d **Adjusted Asphalt Film Thickness (Adj. AFT)**

The adjusted asphalt film thickness of the mixture at design and during production shall meet the minimum criteria as shown in Table 2360.3-B2b. Adjusted Asphalt Film Thickness is based on the calculated aggregate surface area (SA) and the effective asphalt binder content. The procedure for calculating Adj. AFT is outlined below:

B2d (1) **Aggregate Surface Area (SA)**

The aggregate surface area (SA) is calculated by using the following formula [(1)]:

$$SA = 2 + 0.02a + 0.04b + 0.08c + 0.14d + 0.30e + 0.60f + 1.60g$$

Where:

SA = Aggregate Surface Area in SF/lb. of dry aggregate

a, b, c, d, e, f and g are the percent of total aggregate passing the #4, #8, #16, #30, #50, #100 and #200 sieves, respectively. The percent passing each of the sieves shall be rounded to the nearest 1 percent, except for the #200 sieve, which shall be rounded to the nearest 0.1 percent.

(1) Mixtures with a combined (-) #4 G_{sb} less than 2.580, or greater than 2.700, will have the calculated SA adjusted accordingly. The SA will be increased for mixtures with a combined (-) #4 G_{sb} less than 2.580, and decreased for mixtures with a combined (-) #4 G_{sb} greater than 2.700. The SA adjustment procedure is as follows: Adjusted SA = SA x (2.650 ÷ Mixture (-) #4 G_{sb}). There will be no SA adjustment for mixtures with a combined (-) #4 G_{sb} between 2.580 and 2.700.

B2d (2) Adjusted Asphalt Film Thickness (Adj. AFT)

Adjusted Asphalt Film Thickness is calculated as follows:

Adj. AFT = AFT + 0.06(SA-28)

Asphalt film thickness (AFT) is calculated by the following formulas:

$$AFT = \frac{P_{be} \times 4870}{100 \times P_s \times SA}$$

Where:

AFT = Asphalt Film Thickness in microns
P_{be} = Effective Asphalt Content as a percent of the total mixture
4870 = Constant Conversion Factor
P_s = Percent Aggregate in Mixture /100, or (100-P_b) /100
P_b = Percent Total Asphalt Cement in Mixture
SA = Calculated Aggregate Surface Area in SF/lb.

The Adjusted AFT will be greater than the AFT if the SA is greater than 28.0 SF/Lb., and will be less than the AFT if the SA is less than 28.0 SF/Lb.

B3 Tensile Strength Ratio sample

Mixture or briquettes that represent the mixture at optimum asphalt content, shall be submitted at least 7 days prior to actual production for verification of moisture sensitivity retained tensile strength ratio (TSR). Material submitted for TSR verification may be tested for maximum specific gravity G_{mm} compliance in addition to TSR results. Failure to meet the G_{mm} tolerance will result in rejection of the submitted mix design. A new mix design submittal will be required and will be subject to provisions described in Section 2360.3C. One of the following options may be used to verify that the tensile strength ratio (TSR) meets the requirements in Table 2360.3-B2b.

Option A) The Contractor will batch material at the design proportions including optimum asphalt. Immediately (before curing) split the sample and allow samples to cool to room temperature. Submit 77 pounds [35 kg] of mixture to the District Materials Laboratory for curing and test verification. Both groups will use a two (2) hour cure time (± 15 minutes) at 290°F [144°C] and follow procedures in ASTM D 4867-92, Mn/DOT modified as defined in the Mn/DOT Laboratory Manual.

Option B) The Contractor batches, cures (as indicated in option A), compacts, and submits briquettes and uncompacted mixture as specified below.

Table 2360.3-B3
Option B Mixture Requirements

Item	Gyratory Design
Un-compacted Mixture Sample Size	8,200 g
Number of compacted briquettes[(1)]	6
Compacted briquette air void content	6.5 – 7.5%

[(1)] 6 inch [150mm] specimens

B4 Aggregate Specific Gravity..... AASHTO T84 and T85, Mn/DOT Modified

The Contractor shall determine the specific gravity of all aggregate used in the mixture.

C Documentation

Each proposed JMF submitted for review under Section 2360.3B and 2360.3D shall include the following documentation and test results.

(1) The name(s) of the individual(s) responsible for the Quality Control of the mixture during production.
(2) The low project number of the Contract on which the mixture will be used.
(3) The design traffic level and the design number of gyrations.
(4) The temperature ranges the mixture is intended to be discharged from the plant and compacted at the roadway shall be provided by the asphalt binder supplier. Temperatures to be included are, laboratory mixing and compaction temperature ranges and maximum field mixing and compaction temperatures..
(5) The percentage in units of 1 percent (except the #200 sieve [0.075 mm] in units of 0.1 percent) of aggregate passing each of the specified sieves (including the #16, #30, #50, and #100) for each aggregate to be incorporated into the mixture. The gradation of aggregate from salvaged asphaltic material shall be derived from the material after the residual asphalt has been extracted.
(6) The source and description of the materials to be used. The aggregate pit or quarry source number. The proportion of each material (in percent of total aggregate).
(7) The composite gradation based on (5) and (6) above. Note: Include virgin composite gradation based on (6) and (7) above for mixtures containing RAP/RAS.
(8) The bulk (dry) and apparent specific gravities and water absorption (by % weight of dry aggregate) of both coarse and fine aggregate, for each product used in the mixture (including RAP/RAS). Use AASHTO T-84 and T-85 Mn/DOT modified as defined in the Mn/DOT Laboratory Manual. The tolerance allowed between the Contractor's and the Department's specific gravities are G_{sb} (individual) = 0.040 [+4 AND -4] and G_{sb} (combined) = 0.020.
(9) The composite gradation plotted on a FHWA 0.45 power chart. (Federal form PR-1115)
(10) The test results from the composite aggregate blend at the proposed JMF proportions indicating compliance with Coarse Aggregate Angularity, Fine Aggregate Angularity, and Flat and Elongated as shown in Table 2360.3-B2a.
(11) For mixtures containing RAP/RAS include extracted asphalt binder content of the RAP/RAS with no retention factor included.
(12) The percentage (in units of 0.1 percent) and PG grade of asphalt binder material to be added, based upon the total mass of the mixture.
(13) Each trial mixture design shall include the following:
  (a) A minimum of three different asphalt binder contents (minimum 0.4 percent between each point), with at least one point at, one above and one below the optimum asphalt binder percentage.
  (b) The maximum specific gravity at each asphalt binder content. The theoretical maximum specific gravity used for percent air voids determination shall be calculated based on the average of the effective specific gravities measured by a minimum of two maximum specific gravity tests at the asphalt contents above and below the expected optimum asphalt binder content.

(c) The test results for the individual and average bulk specific gravity, density, and heights, of at least two specimens at each asphalt binder content.
(d) The percent air voids in the mixture at each asphalt binder content.
(e) The Adj. Asphalt Film Thickness (Adj. AFT) at each asphalt binder content.
(f) The fines to Effective Asphalt (F/A) ratio calculated to the nearest 0.1 percent.
(g) TSR results at the optimum asphalt binder content.
(h) Graphs showing air voids, adjusted AFT, Gmb, Gmm and unit weight vs. percent asphalt binder content for each of the three asphalt binder contents submitted with trial mix.
(i) Evidence the completed mixture will conform to design air voids (V_a), Adj. AFT, TSR, F/A_e (Fines to effective asphalt ratio).
(j) The documentation shall also include labeled gyratory densification tables and curves generated from the gyratory compactor for all points used in the mixture submittal.

(14) Optional Add-Rock/Add-Sand Provisions

If the Contractor chooses to use the add-material option to augment the submitted JMF, the Contractor shall provide samples of the aggregate for quality analysis in accordance with Section 2360.3B1. The Contractor shall provide mix design data for two additional design points per add-material. One point shall show a proportional adjustment to the submitted JMF that includes 5 percent, by mass, add-material at the JMF optimum asphalt percent. The second point shall show a proportional adjustment to the submitted JMF that includes 10 percent, by mass, add-material at the JMF optimum asphalt percent. The following information will be reported for each of these two points:

(a) The maximum specific gravity (average of two tests).
(b) The test results for the individual and average bulk specific gravity, density, and height of at least two specimens at the optimum asphalt binder content.
(c) The percent air voids in the mixture for each point.
(d) The Fines to Effective Asphalt ratio calculated to the nearest 0.1 of a percent.
(e) Coarse and Fine Aggregate crushing counts
(f) The Adjusted Asphalt Film Thickness

Up to two add-materials will be allowed per mix design submittal. Aggregate quality and mix characteristics are required for each proposed add-material and shall be submitted at the time of the original trial mix submittal. No mixture sample or briquettes are required for these two additional points.

D Modified Mixture Design (Option 2)

The Contractor shall submit mixture design test results and documentation as described in Section 2360.3C to the District Materials Laboratory where the Project is located (Department Bituminous Engineer in Metro area) to verify compliance with these specifications. The District Materials Engineer (Department Bituminous Engineer) will issue a Mixture Design Report when the mixture design has been successfully verified. Mixture submittal is not required. The Contractor may use this option if **all** of the following conditions are met:

a) The aggregates must have been tested for and meet all applicable quality requirements in the current construction season.
b) The Level II mix designer submitting the mixture design must have a minimum of 2 years experience in mixture design.

D1 JMF Submittal

At least 2 working days prior to the start of asphalt production, the Contractor shall submit in writing a proposed Job Mix Formula (JMF) for each combination of aggregates to the Department Bituminous Engineer or District Materials Engineer for review. A Level II Quality Management mix designer must sign this proposed JMF. For each JMF submitted, the Contractor shall include documentation as outlined in Section 2360.3C to demonstrate conformance to mixture properties as specified in Table 2360.3-B2b and 2360.3-B2c. The proposed JMF shall be submitted on forms approved by the Department.

D2 Initial Production Test Verification

At the start of production, the testing frequency for the first 1,800 metric tons [**2,000 tons**] of each mix type shall be as specified in Table 2360.4-D.

All mixture placed on Mn/DOT projects shall meet the specified quality indicators and required field density. Failure to do so will result in reduced payment or removal and replacement with acceptable material.

The Department shall take a mix verification sample within the first four samples at the start of production of each mix type.

D3 Tensile Strength Ratio sample

See Section 2360.4E9

E Mixture Design Report

A Mixture Design Report consists of the JMF (Job Mix Formula). The JMF includes composite gradation, aggregate component proportions, asphalt binder content of the mixture, design air voids, adj. asphalt film thickness, and aggregate bulk specific gravity values. JMF limits will be shown for gradation control sieves (JMF limits will be aggregate gradation broadbands shown in Table 2360.2-E), percent asphalt binder content, air voids, and Adj. Asphalt Film Thickness. Issuance of a Mixture Design Report confirms the mixture has been reviewed for and meets volumetric properties only. No guaranty or warranty, either express or implied, is made regarding placement and compaction of the mixture.

A Department reviewed Mixture Design Report is required for all paving except for small quantities of material provided under Section 2360.5H. All submitted materials must meet aggregate and mixture design requirements before a Mixture Design Report is issued. The Department will review two trial mix designs per mix type designated in the plan, per Contract at no cost to the Contractor**.** Additional mix designs will be verified at a cost of $2000 per design, payable to the Commissioner of Transportation.

For city, county, and other agency projects, the Contractor shall provide to the District Materials Laboratory a complete Project proposal including addenda, supplemental agreements, change orders, and any Plan sheets (including typical sections) that affect the mix design. The Department will not start the verification process without this information.

2360.4 MIXTURE QUALITY MANAGEMENT (Quality Control/Quality Assurance)

A Quality Control (QC)

The Contractor shall provide and maintain a quality control program for HMA production. A quality control program is defined as all activities, including mix design, process control inspection, sampling and testing, and necessary adjustments in the process that are related to the production of a hot mix asphalt (HMA) pavement which meets the requirements of the specifications.

A1 Contractor Certified Plant HMA

A1a Certification Procedure

The Contractor shall:

(1) Complete application form and request for plant inspection.
(2) Provide a site map of stockpile locations.
(3) Pass plant and testing facility inspection by having the Plant Inspector and Bituminous Plant Authorized Agent complete and sign the Asphalt Plant Inspection Report (TP 02142-02, TP 02143-02). By signing the Asphalt Plant Inspection Report, the plant authorized agent agrees

to calibrate and maintain all plant and laboratory equipment within allowable tolerances set forth in these specifications, Standard Specifications for Construction, and the Mn/DOT Bituminous Manual.

(4) Obtain a Mixture Design Report prior to production.

A1b Maintaining Certification

To maintain certification, the plant must produce, test, and document all certified plant asphalt mixtures in accordance with the above requirements on a continuous basis. Continuous basis means all asphalt mixtures supplied from a certified plant to any Department project with 2360 asphalt mixtures must be sampled and tested in accordance with 2360 requirements and the Schedule of Materials Control.

The Contractor shall assure the plant certification procedure is performed annually after winter suspension and before producing material for a Project. In addition, a first day sampling and testing frequency rate as stated in Table 2360.4-D shall be followed.

The Contractor shall recertify a plant when it is moved to a new location or a previously occupied location.

A1c Revocation of Plant Certification

The Department Construction Engineer may revoke certification of an asphalt plant when requirements are not being met or records are falsified. The Department may revoke the Technician Certification for the individual involved.

The Department Bituminous Engineer and Department Contract Administrator will maintain a list of companies who have had their asphalt plant certification revoked.

B Quality Assurance (QA)

The Department will perform QA testing as part of the acceptance process. The Engineer is responsible for QA testing, records, and acceptance. The Engineer will accomplish the QA process by:

(1) Conducting Quality assurance and verification sampling and testing.
(2) Observing sampling and tests performed by the QC personnel.
(3) Taking additional samples at any time and any location during production.
(4) Monitoring the required QC summary sheets and control charts.
(5) Verifying calibration of laboratory testing equipment.
(6) Communicating Mn/DOT test results to the Contractor's QC personnel in a timely manner (See 2360.4M and 2360.4N).
(7) Ensuring Independent Assurance Sampling and testing requirements are met.

C Contractor's Quality Control

C1 Personnel Requirements

Along with the proposed mix design data, the Contractor shall submit to the Engineer an organizational chart listing the names and phone numbers of individuals and alternates responsible for mix design, process control administration, and inspection. The Contractor shall also post a current organizational chart and if required by the Engineer, post a daily roster of individuals performing QC testing in the Contractor's test facility.

The Contractor's quality control organization or private testing firm shall have Certified Technicians who have met the requirements on file with the Department's Technical Certification program. Individuals performing process control testing must be certified as a Level I Bituminous Quality Management (QM) Tester. Individuals performing mix design calculations or mix design adjustments must be certified as Level II Bituminous QM Mix Designer. The Contractor shall have a Certified Level II Bituminous QM Mix Designer

available to make any necessary process adjustments. The Contractor shall have a minimum of one person per paving operation certified as a Level II Bituminous Street Inspector.

C2 Laboratory Requirements:

The Contractor shall furnish and maintain a laboratory at the plant site or other site as approved by the Engineer. The laboratory shall be furnished with the necessary equipment and supplies for performing Contractor quality control testing. The laboratory equipment shall meet the requirements listed in Section 400 of the Mn/DOT Bituminous Manual, Mn/DOT Lab Manual, and these specifications, including having extraction capabilities. The laboratory shall be calibrated and operational prior to the beginning of production. In addition to the requirements listed above, the laboratory shall be equipped with a telephone for use by the Contractor or the Engineer. A fax machine and copy machine shall be available for use by the Contractor or the Engineer at the laboratory site. The Engineer may waive the requirement to have a fax machine available at the laboratory site if transfer of data and test results can be accomplished through electronic transmittal (email). The laboratory shall also include a computer and printer. The computer shall have the following minimum requirements: 1) Intel based with either Celeron or Pentium IV processor with a minimum processor speed of 1.8 MHZ. 2) CD writer with CD/RW capability and a minimum write speed of 16x. 3) Windows 2000 or Windows XP with Microsoft Excel version 97 or newer. The printer must be able to print control charts.

The Engineer shall be allowed to inspect measuring and testing devices to confirm both calibration and condition. The Contractor shall calibrate and correlate all testing equipment in accordance with the latest version of the Mn/DOT Bituminous Manual and Mn/DOT Lab Manual. Records of calibration for each piece of testing equipment shall be kept in the same facility as the equipment.

D Sampling and Testing

The Contractor shall ensure that all QC samples are taken at random locations. Random number generation and determination of random sample location shall be consistent with the Mn/DOT Bituminous Manual Section 5-693.7 Table A or Section 5 of ASTM D3665. The Engineer may approve alternate methods of random number generation.

The tests for mixture properties shall be conducted on representative portions of the mix, quartered from a larger sample of mixture taken from behind the paver, or when approved by the Engineer, an alternate sampling location. The procedure for truck box sampling, an alternate sampling location, is on file in the Bituminous Office. When an alternate sampling location is approved and used by the Contractor, the daily verification sample must still be taken from behind the paver.

The Contractor shall obtain a sample of at least 55 pounds [25 kg]. This sample may be either split in the field or transported to the test facility by a method to retain heat to facilitate sample quartering procedures. The Contractor shall store and retain mixture bulk samples and companion samples for the Department for a period of 10 calendar days. The Contractor shall maintain these split samples in containers labeled with companion numbers. The Contractor shall perform QC sampling and testing according to the following schedule.

Determine the planned tonnage for each mixture to be produced during the production day. Divide the planned production by 1000. Round the number to the next higher whole number. This number will be the number of production tests required for that mixture. Required production tests are listed in Table 2360.4-E. Split the planned production into even increments and select sample locations as described above. If actual tonnage exceeds planned tonnage additional tests may be required. During production, mixture volumetric property tests will not be required when mix production is less than 300 tons [270 metric tons]. However, production tests will be required when the accumulative tonnage on successive days exceeds 300 tons [270 metric tons].

At the start of production, the testing frequency for the first 2,000 tons [1800 metric tons] of each mix type shall be as follows:

Table 2360.4-D
Production Start-Up Testing Rates

Production Test	Testing Rates	Test Reference	Section
Bulk Specific Gravity	1 test per 500 tons [450 metric tons]	AASHTO T312,T166 Mn/DOT modified	2360.4E2
Maximum Specific Gravity	1 test per 500 tons [450 metric tons]	AASHTO T209 Mn/DOT modified	2360.4E3
Air Voids (calculated)	1 test per 500 tons [450 metric tons]	AASHTO T269, T312	2360.4E4
Asphalt Content	1 test per 500 tons [450 metric tons]	Bit & Lab Manual	2360.4E1
Adj. AFT (Calculated)	1 test per 500 tons [450 metric tons]	Mn/DOT Lab Manual	2360.3B2d
Gradation	1 test per 500 tons [450 metric tons]	AASHTO T11, T27, T30 Mn/DOT modified	2360.4E6
Coarse Aggregate Angularity	1 test per 1000 tons [900 metric tons]	ASTM D5821 Mn/DOT modified	2360.4E7
Fine Aggregate Angularity (FAA)	1 test per 1000 tons [900 metric tons]	AASHTO T304, Method A	2360.4E8

E Production Tests

When more than one Mn/DOT approved test procedure is available, the Contractor shall select, with the approval of the Engineer, one method at the beginning of the Project and use that method for the entire Project. The Contractor and Engineer may agree to change test procedures during the construction of the Project.

Table 2360.4-E
Production Sampling and Testing Rates

Production Test	Sampling/Testing Rates	Test Reference	Section
Bulk Specific Gravity	Divide the planned production by 1000. Round the number to the next higher whole number.	AASHTO T312, T245 T166 Mn/DOT mod	2360.4E2
Maximum Specific Gravity	"	AASHTO T209 Mn/DOT modified	2360.4E3
Air Voids (calculated)	"	AASHTO T269, T312	2360.4E4
Asphalt Content	"	Bit & Lab Manual	2360.4E1
Adj. AFT (Calculated)	"	Mn/DOT Lab Manual	2360.3B2d
Gradation	1 gradation per 1,000 tons [900 metric tons], or portion thereof (minimum of one per day)	AASHTO T11, T27, T30Mn/DOT modified	2360.4E6
Coarse Aggregate Angularity	2 tests/day for a minimum of 2 days, then 1 per day if CAA is met. If CAA >8% of requirement, 1 sample/day but test 1/week.	ASTM D5821 Mn/DOT modified	2360.4E7
Fine Aggregate Angularity (FAA)	2 tests/day for a minimum of 2 days, then 1 per day if FAA is met. If FAA >5% of requirement, 1 sample/day but test 1/week.	AASHTO T304, Method A	2360.4E8
TSR	When directed by the Materials Engineer	ASTM D4867 Mn/DOT modified	2360.4E9
Aggregate Specific Gravity	When directed by the Engineer	AASHTO T84 & T85, Mn/DOT modified	2360.4E10
Mixture Moisture Content	Daily unless exempted by Engineer	Mn/DOT 5-693.950	2360.4E11
Asphalt Binder	Sample 1st load (each grade) then 1 per 250,000 gallon-sample size 1 quart [1,000,000 liter.]	Mn/DOT 5-693.920	2360.4E12

E1 **Asphalt Binder Content** [2]

(a) Spot Check (Virgin only)..... Mn/DOT Bituminous Manual
(b) Incinerator Oven [1] .....Mn/DOT Laboratory Manual Method 1853
(c) Chemical Extraction .....Mn/DOT Laboratory Manual Method 1851 or 1852
(d) Meter Method (Virgin only)..... Mn/DOT Bituminous Manual

(1) Incinerator Oven may not be used when the percentage of Class B material exceeds 50% within the composite blend, unless a correction factor is determined by the Contractor and approved by the District Materials Engineer.
(2) For Traffic Level 2, 3, 4, and 5 mixtures that include shingles as part of the allowable RAP percentage a minimum of 1 spotcheck per day per mixture blend is required to determine new added asphalt binder (See footnote 1 of Table 2360.3-B2a).

E2 **Gyratory Bulk Specific Gravity, G_{mb} (2 specimens) .....AASHTO T312, T166, Mn/DOT Modified**

E3 **Maximum Specific Gravity, G_{mm} ..... AASHTO T209, Mn/DOT Modified**

E4 **Air Voids - Individual and Isolated (calculation) .....AASHTO T269, T312**

Isolated air voids are calculated using the maximum mixture specific gravity and the corresponding bulk specific gravity from a single test. Individual air voids are calculated from the maximum specific gravity moving average and the bulk specific gravity from that single test.

For gyratory design, compaction shall be conducted to N_{design}, as shown in Table 2360.3-B2b, for the specified Traffic Level.

E5 **Adj. Asphalt Film Thickness (AFT) (calculation) ..... Mn/DOT Lab Manual**

E6 **Gradation - Blended Aggregate ..... AASHTO T-11, T-27, and T-30 (all Mn/DOT modified)**

Testing to determine the blended aggregate gradation shall be determined every 1,000 tons [1800 metric tons], or portion thereof (minimum of one per day), on samples taken at the same time as the required mixture sample for a given increment.

All gradations require a-#200 [- 0.075 mm] wash.

(a) Virgin Aggregate Mixtures - Drum or Screenless Plants
Belt Samples or extracted production samples.
(b) All Other Mixtures:
1. Hot Bins - Drybatch (Optional)
2. Incinerator Oven Mn/DOT Laboratory Manual Method 1853 (Optional) except samples that contain over 50% class B. [1]
3. Extraction Mn/DOT Laboratory Manual Method 1851 or 1852 (Optional)

(1) Incinerator Oven may not be used when the percentage of Class B material exceeds 50% within the composite blend, unless a correction factor is determined by the Contractor and approved by the District Materials Engineer.

E7 **Coarse Aggregate Angularity..... ASTM D5821 Mn/DOT modified**

CAA test results shall meet the minimum percent fractured faces as shown in Table 2360.3-B2a. ASTM D-5821 shall be used to determine coarse aggregate angularity on the composite blend from aggregates used in production of hot mix asphalt. Mixtures that contain virgin aggregates may be tested from composite belt samples. Mixtures that contain RAP must be tested from extracted aggregates taken from standard production

samples. The percentage of fractured faces of the composite aggregate blend less than 100% shall be tested at the following rates:

(1) Perform two tests per day for each mixture blend for a minimum of two days and then one per day if the test samples meet CAA requirements.
(2) If CAA crushing test results exceed 8 percent of the requirement, take one sample per day and perform one test per week.

CAA results must be reported on the test summary sheet. Mixture placed and represented by results below the minimum requirement, as shown in Table 2360.3-B2a, will be subject to reduced payment as outlined in Table 2360.4-L3. Tonnage subjected to reduced payment shall be calculated as the tons placed from the sample point of the failing test until the sampling point when the test result is back within specifications.

E8 Fine Aggregate Angularity ..... ASTM C1252 Method A

FAA test results shall meet the minimum criteria shown in Table 2360.3-B2a. ASTM C1252 Method A shall be used to determine fine aggregate angularity on the composite blend from aggregates used in production of HMA. Mixtures that contain virgin aggregates may be tested from composite belt samples. Mixtures that contain RAP must be tested from extracted aggregates taken from standard production samples. The percentage of uncompacted voids from the composite aggregate blend shall be tested at the following rates.

(1) Perform two tests per day for each mixture blend for a minimum of two days and then one per day if the test samples meet FAA requirements.
(2) If FAA test results exceed 5 percent of the requirement, take one sample per day and perform one test per week.

FAA results must be reported on the test summary sheet. Mixture placed and represented by results below the minimums, as shown in Table 2360.3-B2a, will be subject to reduced payment as outlined in Table 2360.4-L3. Tonnage is subjected to reduced payment shall be calculated as the tons placed from the sample point of the failing test until the sampling point when the test result is back within specifications.

E9 Field Tensile Strength Ratio (TSR) ..... ASTM D4867 Mn/DOT Modified

At the discretion of the Materials Engineer, mixture will be sampled and tested to verify tensile strength ratio (TSR)[(1)]. If the Materials Engineer requires sampling and testing, both the Contractor and the Department will be required to test these samples within 72 hours after it is sampled. Sample size shall be 110 pound [50 kg] minimum and split in half to provide a sample for the Department and the Contractor. The Department companion of this split shall be labeled with the date, time, Project number and approximate cumulative tonnage to date. The Department companion shall be given to the Department Street Inspector or Plant Monitor immediately or delivered to the District Materials Engineer within 24 hours of sampling, as specified by the Engineer. Mixture samples shall be taken from behind the paver unless the Engineer approves an alternate sampling location. Specimen size shall be 6 inch [150 mm] for gyratory design The Contractor may test the sample at a permanent lab site or a field lab site.

(1) When utilizing Option 2 mix design, it is recommended a sample be obtained within the first 5,000 tons [4,500 metric tons] of HMA produced or by the second day of production, whichever comes first, to verify tensile strength ratio (TSR).

Minimum acceptable TSR values for production are shown in Table 2360.4-E9. The Contractor shall stop production immediately if minimum TSR requirements are not met. The Contractor will not be allowed to resume production until anti-strip has been added to the asphalt binder. Determination of who is responsible for the cost of the anti-strip is based on Mn/DOT and Contractor TSR values as outlined in Tables 2360.4E9A and 2360.4E9B. When Mn/DOT is responsible for the cost of the anti-strip, payment will be made only for the cost of the anti-strip for mixtures placed on that project. Mn/DOT will not reimburse the Contractor for any delay costs associated with making changes related to this testing.

Table 2360.4-E9

Mixture Type – Minimum TSR			
Traffic Level 2-3		Traffic Level 4-5	
Contractor	Mn/DOT	Contractor	Mn/DOT
75%	65%	80%	70%

Table 2360.4-E9A

Gyratory Level 2-3		Contractor TSR	
		≥75	<75
Mn/DOT TSR	≥65	NA	Mn/DOT
	<65	Contractor	Contractor

Table 2360.4-E9B

Gyratory Level 4-5		Contractor TSR	
		≥80	<80
Mn/DOT TSR	≥70	NA	Mn/DOT
	<70	Contractor	Contractor

Another sample shall be taken and tested within the first 500 tons [450 metric tons] after production resumes. If the re-test fails to meet the minimum specified value the Contractor shall stop production immediately. Production cannot resume until the Contractor has discussed, with the Engineer, a proposal for resolving the problem. The Contractor shall not operate below the specified minimum TSR on a continuing basis. A continuing basis shall be defined as 2 or more successive tests failing the TSR requirements.

The following conditions will automatically require a sample to be taken and tested:

1. A proportion change of more than 10 percent (from the currently produced mixture) for a single stockpile aggregate.
2. The discretion of the Engineer.

Dispute resolution procedures for TSR are on file in the Bituminous Office.

E10 Aggregate Specific Gravity (Gsb) ..... AASHTO T84 and T85, Mn/DOT modified

At the discretion of the District Materials Engineer, aggregate stockpiles will be sampled and tested to verify aggregate specific gravity. Representative stockpile samples shall be 90 pounds [40 kg] for each aggregate component. All samples shall be split in half to provide material for both the Department and the Contractor. The Department companion of this split shall be labeled with the date, time, Project number and approximate cumulative tonnage to date.

The Department companion shall be given to the Plant Monitor immediately or delivered to the District Materials Engineer within 48 hours of sampling, as specified by the Engineer. Aggregate specific gravity results will be compared to the Contractor's values on the current Mix Design Report. If the results deviate beyond the tolerance specified in Table 2360.4-M, the District Materials Engineer will immediately contact the Contractor and issue a new Mix Design Report with the current specific gravity results. Any mixture placed following notification of new specific gravity values will be based upon Department results. The Contractor shall be notified immediately when new specific gravity values become available. The dispute resolution procedure for aggregate specific gravity is on file in the Bituminous Office.

E11 Moisture Content ..... Mn/DOT 5-693.950

Provide a mixture with moisture content not greater than 0.3 percent. The moisture content in the mixture shall be measured behind the paver or alternate approved sampling method on file in the Bituminous Office.

Sampling and testing shall be conducted by the Contractor on a daily basis unless exempted by the Engineer. Sampling and testing is suggested when rain on stockpiles exceed more than 0.2 inch [5 mm] in a 24 hour period. The sample shall be stored in an airtight container. Microwave testing is prohibited.

HMA that exceeds 0.3% moisture content is unacceptable. The Contractor shall take appropriate action to remove excess water from the mixture. This action may include reducing the production rate, mixing stockpile aggregates prior to placement into the feed bins, and use of covered stockpiles.

E12 Asphalt Binder Samples

The Contractor shall sample the first shipment of each type of asphalt binder, then sample at a rate of one per 250,000 gallons [1,000,000 liters]; sample size shall be 1 quart [1.0L]. All samples shall be taken in accordance with the Mn/DOT Bituminous Manual 5-693.920. Sampling shall be conducted by Contractor and monitored by the Inspector. The Contractor shall record sample information on Asphalt Sample Identification Card. Promptly submit the sample to the Department Materials Laboratory in Maplewood. Contact the Department Chemical Laboratory Director for disposition of failing asphalt binder samples.

F Documentation (Records)

The Contractor shall maintain documentation, including test summary sheets and control charts, on an ongoing basis. The Contractor shall also maintain a file of gyratory specimen heights for all gyratory compacted samples and test worksheets. Reports, records, and diaries developed during the progress of construction activities for the Project, shall be filed as directed by the Engineer and will become the property of the Department. The Contractor shall:

(1) Number test results in accordance with standard Department procedures and record on forms approved/supplied by the Department.

(2) Facsimile or when approved by the Engineer, electronically transmit (email) all production test results on test summary sheets to the District Materials Laboratory and to other sites as requested by the Engineer, by 11 AM of the day following production.

(2a) Include the following production test results and mixture information on the Department approved test summary sheet.

1. Percent passing on all sieves listed in Table 2360.2-E (including #16, #30, #50, #100).
2. Coarse and fine aggregate crushing.
3. Maximum specific gravity (G_{mm}).
4. Bulk specific gravity (G_{mb}).
5. Percent total asphalt binder content (P_b) **and** new added asphalt binder content.
6. Calculated production air voids (V_a).
7. Calculated adjusted AFT (Adj. AFT).
8. Composite aggregate specific gravity (G_{sb}) reflecting current proportions.
9. Aggregate proportions in use at the time of sampling.
10. Tons where sampled.
11. Tons represented by a test and cumulative tons produced.
12. Fines to effective asphalt ratio (F/A_e).
13. Signature Line for Mn/DOT and Contractor Representative.
14. Mixture Moisture Content.
15. Mn/DOT verification sample test result.

(2b) Submit copies of all failing test results to the Engineer on a daily basis.

(3) Provide the Engineer with asphalt manifests or BOL's on a daily basis.

(4) Provide a daily plant diary to include a description of QC actions taken (adjustment of cold feed percentages, changes in JMFs, etc.) include all changes or adjustments on the test summary sheets.

(5) Provide weekly truck scale spot checks.

(6) Provide a Department approved accounting system for all mixes and provide a daily and final Project summary of material quantities and types.

(6a) Provide a final hardcopy summary of all quality control test summary sheets and control charts at completion of bituminous operations on the Project to the Engineer. Because Certified Plant test data often represents test data for multiple projects, it may be necessary to make duplicate copies of the data for each project. The Contractor shall also submit a diskette of the quality control summary sheets, control charts and density worksheets to the Bituminous Engineer.

(7) Furnish an automated weigh scale and computer generated weigh ticket. The ticket shall indicate project number, mix designation (including binder grade), Mixture Design Report#, truck identification and tare, net mass, date and time of loading. Any deviations from the minimum information to be provided on the computer generated weigh ticket must be approved by the Engineer in writing.

(8) Test summary sheets, charts, and records for a mixture produced at one plant site shall be continued from contract to contract. The Contractor shall begin new summary sheets and charts annually for winter carry-over projects. The Contractor shall begin new summary sheets and charts when an asphalt plant is re-setup in the same location after it has moved out.

G Documentation (Control Charts)

The following data shall be recorded on the standardized control charts, all control charts and summary sheets shall be computer generated using software approved by the Engineer. Software is available from the Mn/DOT Bituminous Office at www.mrr.dot.state.mn.us/pavement/bituminous/bituminous.asp.

(1) Blended aggregate gradation, include sieves shown in Table 2360.2-E for specified mixture.
(2) Percent asphalt binder content (P_b)
(3) Maximum specific gravity (G_{mm})
(4) Production air voids (V_a)
(5) Adj. AFT

Individual test results shall be plotted for each test point. A solid line shall connect individual points. The moving average for each test variable shall be plotted starting with the fourth test. A dashed line shall connect the moving average points. The Department's quality assurance and verification test results shall be plotted with triangles. Specification JMF limits shall be indicated on the control charts using a dotted line. The Engineer may waive the plotting of control charts.

H JMF Limits

The production air voids and adj. AFT are based upon the minimum specified requirements as shown in Table 2360.3-B2b. Gradations and asphalt binder content limits are based upon the current Department reviewed Mixture Design Report. Gradation control sieves are shown in Table 2360.2-E. The mixture production targets are listed on the Mixture Design Report. JMF limits are the target plus or minus the limits shown in Table 2360.4-H. JMF limits are used as the criteria for acceptance of materials based on the moving average.

Table 2360.4-H
JMF Limits (N=4)

Item	JMF Limits
Adj. AFT	- 0.5
Production Air Voids, %	± 1.0
Asphalt Binder Content, %	- 0.4
Sieve - % Passing	
1 inch, 3/4 inch, 1/2 inch, 3/8 inch, #4 [25, 19, 12.5, 9.5, 4.75 mm]	Broad Band Limits
#8 [2.36 mm]	Broad Band Limits
#200 [0.075 mm]	Broad Band Limits

H1 Moving Average Calculation

A moving average is the average of the last four test results. The calculation of the moving average shall continue without interruption except under the following conditions:

1) The Contractor shall begin new summary sheets and charts annually for winter carry-over projects.
2) The Contractor shall begin new summary sheets and charts when an asphalt plant is re-setup in the same site after it has been moved out.

I JMF Bands

JMF Bands are defined as the area between the target, as identified on the Mixture Design Report, and the JMF limits.

J JMF Adjustment

The Contractor shall begin mixture production with the materials (gradation, asphalt content, and aggregate proportions) closely conforming to the reviewed Mixture Design Report. Closely conforming shall be defined as aggregate proportions within 5 percent of the design proportions [(1)] and other mixture parameters within the JMF limits in Table 2360.4-H. This requirement may be waived if the Contractor provides the District Materials Laboratory with prior documented production data showing how production affects the mixture properties or if the Contractor provides the District Materials Laboratory with a written justification or explanation of material changes since the original mixture submittal.

[(1)] The Contractor shall begin mixture production using all aggregate proportions included on the Mixture Design Report unless the aggregate proportion is shown as 0 percent.

J1 JMF Request for Adjustment

If, during production, the Contractor determines from results of QC tests that adjustments to the mix design are necessary to achieve the specified properties, the following provisions shall apply. Unless otherwise authorized by the District Materials Engineer, no adjustments are allowed using aggregates or materials not part of the original mix design.

The Contractor shall make a request for a JMF adjustment to the Department Bituminous Engineer or District Materials Engineer. The requested change will be reviewed for the Department by a Certified Level II Bituminous QM Mix Designer. If the request meets the design requirements in Tables 2360.3-B2a and 2360.3-B2b, a revised Mixture Design Report shall be issued. Each trial mixture design submittal as described in Section 2360.3A may have three JMF adjustments per mixture per project without charge. Additional JMF adjustments requested must be accompanied with a $500 fee per each additional JMF adjustment, payable to the Commissioner of Transportation.

The adjusted JMF shall be within the mixture specification gradation design broadbands shown in Section 2360.2E. Should a redesign of the mixture become necessary, a new JMF shall be submitted. The JMF

asphalt content may only be reduced if at least the last four Adjusted AFT production tests (calculations) average 8.5 microns or more, and have minimum Individual Adjusted AFT's of at least 7.5 microns.

Adjustments will be made as a result of an interactive process between the Contractor, Engineer, and District Materials Engineer. Consecutive requests for JMF adjustments, without production data, are not allowed. The calculation of the moving average shall continue after the JMF has been approved.

J1a JMF Request for Adjustment for Proportion Change > 10%

If a JMF adjustment is requested for a proportion change exceeding 10% (from the currently produced mixture) for a single stockpile aggregate, supporting production test data from a minimum of four tests run at an accelerated testing rate of 1 test per 500 tons [450 metric tons] must be included with the request for adjustment. In addition to the requirements listed above, acceptable verification and approval of the requested JMF will be based on individual and moving average test results. Individual test results must be within twice the requested JMF limits for percent asphalt binder, production air voids, and Adjusted AFT. Individual gradations must be within the Broad Bands. The moving average values must be within the control limits of Table 2360.4-H. The calculation of the moving average shall continue after the change in proportions.

If the mixture meets the specified quality indicators, the request for JMF adjustment will be signed by the District Materials Laboratory and considered effective from the point the proportion change was made. Failure to meet the quality indicators will result in reduced payment or removal and replacement with acceptable material. Consecutive requests for JMF adjustments without production data are not allowed.

K Corrective Action -- Percent Asphalt Binder Content, Adj. AFT, and Gradation and Production Air Voids

When the moving average values trend toward the JMF limits, the Contractor shall take corrective action. The corrective action taken shall be documented on summary sheets and, if applicable, a request for JMF adjustment shall be submitted to the District Materials Engineer for review and approval. All tests shall be part of the project files and shall be included in the moving average calculations. The Contractor shall notify the Engineer whenever the moving average values exceed the JMF limits.

L Failing Materials

The determination of price adjustments for failing materials will be based on the criteria outlined in this Section. Material acceptance is based on individual and moving average test results. Isolated test results are used for acceptance of air voids at the start of mixture production. Generally, individual test results which are more than twice the JMF bands are considered failing. Moving average test results are considered failing when they exceed the JMF limits. The Contractor shall begin new summary sheets annually for winter carry-over projects.

If the moving average values exceed the JMF limits, the Contractor shall stop production and make adjustments. The Contractor shall restart production only after notifying the Engineer of the adjustments that have been made. Testing shall resume at the accelerated rates and for the tests listed in Table 2360.4-D for the next 2,000 tons [1800 metric tons] of mixture produced. The calculation of the moving average shall continue after the stop in production.

Mixture produced where the moving average of four exceeds the JMF limits shall be considered unsatisfactory and subject to requirements of Section 2360.4L4, L5, L6, and L7. Individual test failures are discussed in Section 2360.4L1, L2, and L3.

When the total production of a mixture type for the entire project requires less than four tests, acceptance of material will be consistent with the criteria outlined in Section 2360.4L1 and L3.

When the Contractor's testing data fails to meet specified tolerances as listed in Table 2360.4-M, quality assurance/verification data shall be used in place of the Contractor's data to determine the appropriate payment factor.

L1 Isolated Failures at Mixture Start-Up – Production Air Voids

At the start-up of mixture production, before a moving average of four can be established the first three (3) isolated test results for production air voids will be used for acceptance. Isolated production air voids are calculated by using the maximum mixture specific gravity and the corresponding bulk specific gravity from that single test. After four (4) samples have been tested and a moving average of four can be established, acceptance will be based on individual and moving average production air voids.

If, at the start of production, any of the first three (3) isolated test results for production air voids exceeds twice the JMF bands from the target listed on the Mixture Design Report, the material is considered unsatisfactory or unacceptable. Reduced payment as outlined in Table 2360.4-L3 shall apply to all tonnage placed from the sample point of the failing test until the sample point when the isolated test result is back within twice the JMF bands. When the failure occurs at the first test, after the start of production, the tonnage subjected to reduce payment shall be calculated as described above and shall include the tonnage from the start of production.

When isolated air voids are less than 1.0% or greater than 7.0% the Engineer will decide whether the mixture is subject to removal and replacement or reduced payment. If the mixture is to be removed and replaced, the Contractor at his expense will perform the work. To better define the area to be removed and replaced the Engineer may require the Contractor to test inplace mixture. This may include testing mixture placed prior to the failing test result. Reduced payment will be 50 percent of the Contract bid price.

L2 Blank

L3 Individual Failure - Gradation, Percent Asphalt Binder, Production Air Voids, and Adjusted AFT

Table 2360.4-L3
Reduced Payment Schedule for Individual Test Results

Item	Pay Factor (1)
Gradation	95 %
Coarse and Fine Aggregate Crushing	90 %
Asphalt Binder Content	90 %
Production Air Voids (individual (2) and isolated (3))	80 %

(1) Lowest Pay Factor applies when there are multiple reductions on a single test.
(2) Individual air voids are calculated using the moving average maximum specific gravity and the bulk specific gravity from that single test.
(3) Isolated air voids are calculated from the maximum specific gravity and the bulk specific gravity from that single test. Isolated void test results are used for acceptance only for the first 3 tests after mixture production start-up.

If the individual gradation test exceeds the JMF Broad Bands listed on the Mixture Design Report the material is considered unsatisfactory or unacceptable. Reduced payment as outlined in Table 2360.4-L3 shall apply to all tonnage represented by the individual test.

If the individual test result for adjusted AFT is less than 7.5 microns reduced payment or removal and replacement as shown in Table 2360.4-L3a shall apply to all tonnage represented by the individual test (calculation). This tonnage includes all material placed from the sample point of the failing test until the sample point when the test result meets specification requirements. When the failure occurs at the first test after the start of daily production, the tonnage subjected to reduce payment or removal and replacement shall be calculated as described below and shall include the tonnage from the start of production that day.

Table 2360.4-L3a
Reduced Payment Schedule for Individual Test Results - Adjusted AFT

Individual Adjusted AFT (microns)	Pay Factor
7.5 or Greater	100%
7.4 to 7.0	90%
6.9 to 6.1	75%
6.0 or Less	R&R[1]

[1] Remove and Replace at the Contractor's expense

If the individual tests for percent asphalt binder content or production air voids exceeds twice the JMF bands from the target listed on the Mix Design Report the material is considered unsatisfactory or unacceptable. Reduced payment as outlined in Table 2360.4-L3 shall apply to all tonnage placed from the sample point of the failing test until the sample point when the test result is back within twice the JMF limits. When the failure occurs at the first test after the start of daily production, tonnage subjected to reduced payment shall be calculated as described above and shall include the tonnage from the start of production that day.

When individual air voids are less than 1.0% or greater than 7.0% the Engineer will decide whether the mixture is subject to removal and replacement or reduced payment. If the mixture is to be removed and replaced, the Contractor at his expense will perform the work. To better define the area to be removed and replaced the Engineer may require the Contractor to test inplace mixture. This may include testing mixture placed prior to the failing test result. Reduced payment will be 50 percent of the Contract bid price.

L4 Moving Average Failure at Mixture Start-Up - Production Air Voids

When a moving average failure occurs within any of the first 3 moving average results after mixture start-up (tests 4, 5, 6), the mixture will be considered acceptable if the individual air void, corresponding to the moving average failure is within the JMF limits. If the individual air void is not within the JMF limit, the mixture will be considered unacceptable and is subject to reduced payment. The Engineer may waive the penalty if the isolated air void corresponding to the individual air void is within the JMF limit. Reduced payment will be 70 percent of the Contract bid price. Tonnage subjected to reduced payment shall be calculated as the tons placed from the sample point of the failing moving average result and corresponding individual air void beyond the JMF limit to the sampling point when the individual test result is back within the JMF limit.

L5 Moving Average Failure at Mixture Start-Up – Adjusted AFT

The Moving Average (n=4) Adjusted AFT will not be calculated until the **sixth** test after the beginning of mixture production of that specific mixture. This calculation shall include the Individual results of test (calculation) # **3, 4, 5 and 6**.

L6 Moving Average Failure - Production Air Voids

A moving average production air void failure occurs when the individual production air void moving average of four exceeds the JMF limit. This mixture is considered unacceptable and is subject to reduced payment. Reduced payment will be 70 percent of the Contract bid price. Tonnage subjected to reduced payment shall be calculated as the tons placed from the sample point of all individual test results beyond the JMF limits which contributed to the moving average value that exceeded the JMF limit to the sampling point when the individual test result is back within the JMF limits. When the failure occurs at the first test after the start of daily production, tonnage subjected to reduced payment shall include the tonnage from the start of production that day.

Table 2360.4-L6
Reduced Payment Schedule for Moving Average Test Results

Item	Pay Factor (1)
Gradation	90 %
Coarse and Fine Aggregate Crushing	NA (individual failures only)
Adjusted AFT	80 %
Asphalt Binder Content	80 %
Production Air Voids	70 %

(1) Lowest Pay Factor applies when there are multiple reductions on a single test.

L7 Moving Average Failure - Percent Asphalt Binder Content, Gradation, and Adjusted AFT

For mixture properties including asphalt binder content, and gradation, where the moving average of four exceeds the JMF limits, the mixture is considered unacceptable and subject to reduced payment. Reduced payment as listed in Table 2360.4-L6 will be applied to the Contract bid price. Tonnage subjected to replacement or reduced payment shall be calculated as the tons placed from the sample point of all individual test results beyond the JMF limits which contributed to the moving average value that exceeded the JMF limit, to the sampling point when the individual test result is back within the JMF limits. When the failure occurs at the first test after the start of daily production, tonnage subjected to reduced payment shall include the tonnage from the start of production that day.

The Moving Average (n=4) Adjusted AFT will not be calculated until the **sixth** test after the beginning of mixture production of that specific mixture. This calculation shall include the Individual results of test (calculation) # **3, 4, 5 and 6**. If the Moving Average (n=4) of the Adjusted AFT is less than 8.0 microns, the mixture is considered unsatisfactory, and will be accepted at a reduced payment. Reduced payment will be 80 percent of the Contract bid price. Tonnage subjected to replacement or reduced payment shall be calculated as the tons placed from the sample point of all Individual Adjusted AFT results less than 8.0 microns, which contributed to the Moving Average value that was less than 8.0 microns, to the sample point when the Individual Adjusted AFT is 8.0 microns or greater. When the failure occurs at the first test after the start of daily production, the tonnage subjected to reduced payment shall be calculated as described above and shall include the tonnage from the start of production that day.

L8 Coarse and Fine Aggregate Crushing Failure

If any test result for Coarse Aggregate Angularity or Fine Aggregate Angularity crushing fail to meet minimum requirements in Table 2360.3-B2a, all material placed is subject to reduced payment as outlined in Table 2360.4-L3. Tonnage subjected to reduced payment shall be calculated as the tons placed from the sample point of the failing test until the sampling point when the test result is back within specifications. When the failure occurs at the first test after the start of daily production, tonnage subjected to reduced payment shall include the tonnage from the start of production that day.

M Quality Assurance

The Engineer will periodically witness the sampling and testing being performed by the Contractor. If the Engineer observes that the sampling and quality control tests are not being performed in accordance with the applicable test procedures, the Engineer may stop production until corrective action is taken. The Engineer will notify the Contractor of observed deficiencies promptly, both verbally and in writing.

The Engineer may obtain additional samples, at any time, to determine quality levels. These additional samples or verification samples are described in Section 2360.4N. For mixture, the Contractor shall test their portion immediately.

All testing and data analysis shall be performed by the Certified Level I Bituminous Quality Management (QM) Technician. Certification shall be in accordance with the Mn/DOT Technical Certification Program. The Department shall post a chart giving the names and telephone numbers for the personnel responsible for the Quality assurance program.

The Engineer shall calibrate and correlate all laboratory testing equipment in accordance with the latest versions of the Mn/DOT Bituminous Manual and Laboratory Manual.

Table 2360.4-M
Allowable Differences (Tolerances) Between Contractor and Mn/DOT Test Results*

Item	Allowable Difference
Mixture Bulk Specific Gravity (G_{mb})	0.030
Mixture Maximum Specific Gravity (G_{mm})	0.019
Adjusted AFT (Calculated)	1.2
Fine Aggregate Angularity, uncompacted voids (U) %	1
Coarse Aggregate Angularity, % fractured faces (%P)	15
Aggregate Individual Bulk Specific Gravity (+ #4 [+4.75mm])	0.040
Aggregate Individual Bulk Specific Gravity (- #4 [-4.75mm])	0.040
Aggregate combined blend Specific Gravity (G_{sb})	0.020
Tensile Strength Ratio (TSR) %	See Table 2360.3-B2b
Asphalt Binder Content	
Meter Method, %	0.2
Spot Check Method, %	0.2
Chemical Extraction Methods, %	0.4
Incinerator Oven, %	0.3
Chemical vs. Meter, Spot Check, or Incinerator methods	0.4
Incinerator Oven vs. Spot Check	0.4
Gradation Sieve % passing	
1 inch, ¾ inch, ½ inch, 3/8 inch [25.0, 19.0, 12.5, 9.5 mm]	6
#4 [4.75 mm]	5
#8, #16, #30, [2.36, 1.18, 0.60 mm]	4
#50 [0.30 mm]	3
#100 [0.15 mm]	2
#200 [0.075 mm]	1.2

*Test tolerances listed are for single test comparisons.

N Verification Testing

A verification sample is a sample, which is sampled and tested by Mn/DOT to assure compliance of the Contractor's Quality Control program. A verification companion is a companion sample, to Mn/DOT's verification sample, provided to the Contractor. The Contractor is required to test and use this verification companion sample as part of the QC program. The verification companion sample will replace the next scheduled QC sample. It is recommended enough material be sampled to accommodate retesting should the samples fail to meet requirements as described below.

Verification testing shall be performed on at least one set of production tests Section 2360.4E, excluding sections E9, E10, E11, and E12, on a daily basis per mix type. The verification companion sample will be used to verify the requirements of Tables 2360.2-E, 2360.3-B2a, 2360.3-B2b, and 2360.3-B2c and will be compared to the Verification sample for compliance with allowable tolerances as specified in Table 2360.4-M. These include the mixture properties of G_{mm} (mixture max gravity), G_{mb} (mixture bulk gravity), asphalt binder content, Adjusted AFT (calculated), Coarse and Fine Aggregate crushing, and gradation. For Coarse and Fine Aggregate crushing that meets the requirements of Section 2360.4E7 and 2360.4E8 the one test per week shall be performed on a verification companion. These do not include the aggregate bulk specific gravity G_{sb}, fines to effective asphalt, or the tensile strength ratio (TSR). Asphalt binder content and gradation must be determined by either extraction method 2360.4E1b or 2360.4E1c.

The Department's verification test results will be available to the Contractor within 2 working days from the time the sample is delivered to the District Laboratory for Gmm mixture max gravity, Gmb mixture bulk

gravity, air voids (calculated), asphalt binder content, Adj. AFT (calculated). Gradation and crushing results will be provided to the Contractor within 3 Mn/DOT working days. Once the verification test results are available, they will be included on the test summary sheet. These results and those from the Contractor's verification companion will be compared for allowable tolerances as specified in Table 2360.4-M. If the tolerances are met, the verification process is complete.

If the tolerances between Department and Contractor are not met, retests of the material shall be conducted by the Department. If the retests fail to meet tolerances, the Department's verification test results will be substituted for the Contractor's results in the QC program and used for acceptance. Only those parameters out of tolerance will be substituted and, if applicable, volumetric properties will be recalculated [(1)].

If the Adjusted AFT calculation is out of tolerance, the Mn/DOT Adjusted AFT calculation (based on Mn/DOT test results) will be Equalized and used for the Individual Adjusted AFT result, and calculation of Moving Average Adjusted AFT results. Equalization of the Mn/DOT Adjusted AFT result consists of increasing the original Mn/DOT value by 0.5 microns. This increased value will then be used for acceptance.

When tolerances from the verification sample retests are not met, an investigation will begin immediately to determine the cause of the difference. Testing equipment, procedures, worksheets, gyratory specimen height sheets, and personnel will be reviewed to determine the source of the problem. The District Materials Engineer may also require at least one hot-cold comparison of mixture properties be performed. The procedure for hot-cold comparisons is as follows:

> The hot-cold comparison sample will be split into three representative portions. The Engineer will observe the Contractor testing the sample. One part shall be compacted immediately while still hot (additional heating maybe required to raise the temperature of the sample to compaction temperature). The second and third part will be allowed to cool to air temperature. The Contractor will retain the second part and the third part will be transported to the District Materials Laboratory. On the same day and at approximately the same time the Contractor and the District Materials Laboratory will heat their samples to compaction temperature and compact them. From this information a calibration factor will be developed to compare the specific gravity of the hot compacted samples to reheated compacted samples. Each test will involve a minimum of two gyratory specimens. The Materials Engineer or the Contractor may require additional test comparisons.

Note: Care must be taken when reheating samples for mixture properties analysis tests. Mix samples should be reheated to 160°F [70°C] to allow splitting of the sample into representative fractions for the various tests. Overheating of the mixture portions to be tested for maximum specific gravity (Rice Test) may result in additional asphalt being absorbed in the aggregate.

The Department will test the previously collected QA samples until they meet the tolerances or the remaining samples are all tested. Once these samples are tested, the department will test QA samples subsequent to the verification sample until tolerances are met. Acceptance will be based on QC data with substitution of Department test results for those parameters out of tolerance [(1)]. If reestablishment of test result tolerances is not achieved within 48 hours, the Contractor shall cease mixture production and placement until the problem is resolved.

(1) If, through analysis of data, it is determined there is a bias in the test results, the Engineer will determine which results are appropriate and shall govern. Methods to analyze data for determination of bias are on file in the Bituminous Office.

2360.5 CONSTRUCTION REQUIREMENTS

A General

The following construction requirements provide for the construction of all courses. When construction is under traffic, the requirements of Mn/DOT 2221.3D will apply.

B Restrictions

In general, no work within the roadway will be permitted in the spring until seasonal load restrictions on roads in the vicinity have been removed. However, work within the roadbed may be permitted before that time if, in the opinion of the Engineer, it can be done without damage to the subgrade. HMA shall not be placed when, in the opinion of the Engineer, the weather or roadbed conditions are unfavorable.

No asphalt pavement wearing course (final wearing course if multiple wearing courses) shall be placed after October 15th in that part of the state north of an east-west line between Browns Valley and Holyoke, nor after November 1st south of that line. The Engineer may waive these restrictions when:

(1) The asphalt mixture is not being placed on the traveled portion of the roadway, or

(2) The roadway involved will not be open to traffic during the following winter, or

(3) The Engineer directs in writing the mixture be placed.

The Contractor shall not use petroleum distillates such as kerosene and fuel oil to prevent adhesion of asphalt mixtures in pavement hoppers, truck beds, or on the contact surfaces of the compaction equipment. Anti-adhesive agent must meet the criteria for "Effect on Asphalt" as described in the most recent Asphalt Release Agent Report on file in Mn/DOT's Office of Environmental Services and the Bituminous Office.

C Equipment

C1 Asphalt Mixing Plants

C1a Requirement for All Plants

The Contractor shall test and calibrate all scales according to Mn/DOT 1901, except as otherwise designated by the Contract.

C1a(1) Equipment for the Preparation of the Aggregate

Add mineral filler to the mixture using a storage silo equipped with a device to ensure a constant and uniform feed.

C1a(2) Equipment for the Preparation of Asphalt Material

Tanks for storage of asphalt material at the plant shall be equipped to heat the material and maintain the material at the required temperatures. The discharge end of the circulating line shall be below the surface of the asphalt material. Provide agitation for modified asphalt, when used, if recommended by the supplier.

An outage table or chart and measuring stick shall be provided for each storage or working tank. Tanks shall be equipped with provisions for taking of asphalt binder material samples. After delivery of asphalt binder material to the Project, the Contractor shall not heat the material above 350°F [175°C]. For modified asphalt, the maximum storage temperature shall not exceed the recommendation of the asphalt supplier.

C1a(3) Asphalt Binder Control

When asphalt binder material is proportioned by volume, the plant shall be equipped with either a working tank or a metering system for determining asphalt binder content of the mixture.

The working tank shall have a capacity between 1,000 gallons [3 800 L] and 2,000 gallons [7 600 L]. The working tank shall be calibrated and supplied with a calibrated measuring stick. The tank may be

connected to a mixing unit and used only during spot check operations, but it shall be available at all times. Any feedback shall be returned to the working tank during spot check operations.

The metering system shall consist of at least one approved asphalt binder flow meter in addition to the asphalt binder pump. The flow meter shall be connected to the asphalt binder supply to measure and display only the asphalt binder being fed to the mixer unit. The meter readout shall be positioned for convenient observation. Means shall be provided for comparing the flow meter readout with the calculated output of the asphalt binder pump. In addition, the system shall display in gallons [liters] or to the nearest 0.001 tons [0.001 metric tons], the accumulated asphalt binder quantity being delivered to the mixer unit. The system shall be calibrated and adjusted to maintain an accuracy of ± one percent error. This calibration shall be required for each plant set-up prior to production of mixture.

C1a(4) Dryer: The aggregate shall be free of unburned fuel.

C1a(5) Thermometric Equipment:

The plant shall be equipped with a sufficient number of thermometric instruments to ensure temperature control of the aggregate and the asphalt binder material.

C1a(6) Pollution Controls

C1a(6)(a) Pollution 1717

C1a(7) Surge and Storage Bins

The plant may include facilities to store hot asphalt mixture for coordinating the rate of production with the paving operations. Storage of the hot mixture will be permitted for a period not to exceed 18 hours, provided the following requirements are met:

(a) Hot mix storage facilities shall be designed and operated to prevent segregation of the mix, drainage of the asphalt from the mix, and to prevent excessive cooling or overheating of the mixture.

(b) The temperature of the mixture at time of discharge from the storage facility shall be within a tolerance of 9°F [5°C] of the temperature when discharged from the silo or mixer.

C2 Placement and Hauling Equipment

All equipment shall be serviced away from the paving site to prevent contamination of the mixture. Units that drip fuel, oil, or grease shall be removed from the paved surface until such leakage is corrected.

C2a Asphalt Pavers

Asphalt pavers shall be self-contained, power-propelled units, with an operational vibratory screed, capable of spreading and finishing courses of asphalt plant mix material in widths applicable to the specified typical sections and thicknesses, indicated in the Contract.

The screed or strike-off assembly shall produce a finished surface of the required evenness and texture without tearing, shoving, or gouging. For mainline paving, if the paving width is greater than the basic screed, auger and mainframe extensions, which meet manufacture's recommendations for the paving width, are required unless otherwise directed by the Engineer. Strike-off only extension assemblies are not allowed for mainline wearing course paving, unless directed by the Engineer.

All pavers shall be equipped with an approved automatic screed control. The automatic controls shall include a system of sensor-operated devices, which follow reference lines, or surfaces on one or both sides of the paver as required. The speed of the paver shall be adjusted to produce the best results.

Automatic screed control by means of an erected string line shall only be required when stated in the Contract.

All mixtures shall be spread without segregation to the cross sections shown in the plans. In general, leveling layers shall be spread by the method producing the best results as approved by the Engineer. The objective is to secure a smooth base of uniform grade and cross section so that subsequent courses will be uniform in thickness. The leveling layer may be spread with a properly equipped paver or, when approved by the Engineer, a motor grader equipped with a leveling device or with other means for controlling the surface elevation of the leveling layer.

All mixtures shall be spread, to the fullest extent practicable, by an asphalt paver. When approved by the Engineer, mixtures may be spread by a motor grader in areas that are inaccessible to a paver such as on driveway entrances, irregular areas, short isolated areas or when the quantity of mixture makes it impractical to place with a paver.

On shoulder surfacing and uniform width widening, when the placement width is too narrow for a paver, the mixture in each course shall be spread with an approved mechanical device.

The placement of each course shall be completed over the full width of the section under construction on each day's run unless otherwise directed by the Engineer.

C2b Trucks

Trucks for hauling asphalt mixtures shall have tight, clean, and smooth beds. Mixture shall not be allowed to adhere to the truck beds. Adherence may be prevented by spraying the truck bed with an anti-adhesive agent in accordance with Section 2360.5B. Each truck shall be equipped with a cover of canvas or other suitable material to protect the mixture from weather. The cover shall extend at least 1 foot [300 mm] over the sides and be attached to tie-downs unless the truck is furnished with a mechanical or automated covering system, which prevents airflow underneath by stretching the cover tightly on the top of or inside the sideboards. The cover shall be used when directed by the Engineer.

C2c Motor Graders

Motor graders shall be self-propelled and have pneumatic tires with a tread depth of 1/2 inch [13 mm] or less. They shall be equipped with a blade not less than 10 feet [3 m] in length and shall have a wheelbase of not less than 15 feet [4.5 m].

C2d Distributor

Use a distributor designed, equipped, calibrated, maintained, and operated to uniformly apply material on surfaces with varying widths and up to 15 feet [4.6 m] wide. Provide a distributor capable of maintaining a uniform distributing pressure and controlling the application rates up to 2.0 gallons [9.0L] per square yard [square meter] within a tolerance of 0.02 gallon per square yard [0.09 L/m2]. Provide a distributor equipped with a tachometer, pressure gauges, accurate volume-measuring devices or a calibrated tank, a thermometer for measuring temperatures of tank contents, a power-operated pump, and full circulation spray bars with lateral and vertical adjustments.

D Treatment of the Surface

D1 Tack Coat

An asphalt tack coat shall be applied to existing asphalt and concrete surfaces, and to the surface of each course or lift constructed, except for the final course or lift, according to Mn/DOT 2357. Emulsified asphalt tack coats shall be allowed to break, as indicated by a color change from brown to black, before a subsequent lift is placed.

The contact surfaces of all fixed structures and the edge of the in-place mixture in all courses at transverse joints and longitudinal joints shall be given a uniform but not excessive coating of liquid asphalt or emulsified asphalt before placing the adjoining mixture.

E Compaction Operations

After being spread, each course shall be compacted to the required density. The rollers shall, as practicable, be operated continuously so all areas are thoroughly compacted to the required density. When not operating, the rollers shall not stand on the uncompacted mixture or newly rolled pavement having a surface temperature exceeding 140°F [60°C]. Rolling with steel-wheeled rollers shall be discontinued if it produces excessive crushing or pulverizing of the aggregate or displacement of the mixture.

To prevent adhesion of the mixture to the steel roller wheels, the contact surfaces of the wheels shall be kept properly moistened using water or a water solution containing small quantities of a detergent or other approved material.

To secure a true surface, variations such as depressions or high areas, which may develop during rolling operations, and lean, fat or segregated areas shall be corrected by removing and replacing the material in the defective area. All such corrections shall be accomplished as directed by the Engineer at no expense to the Department.

When mixtures are spread by a motor grader, pneumatic tired rollers shall compact the mixture simultaneously with the spreading operation.

F Construction Joints

Joints shall be thoroughly compacted to produce a neat, tightly bonded joint that meets surface tolerances. Both transverse and longitudinal joints are subject to density requirements as outlined in Section 2360.6 Pavement Density.

F1 Transverse Joints

A transverse joint (full paver width at right angles to the centerline) shall be constructed when mixture placement operations are suspended. The forward end of the freshly laid strip shall be thoroughly compacted by rolling before the mixture has cooled. When work is resumed, the end shall be cut vertically for the full depth of the layer unless a formed edge is constructed as approved by the Engineer.

F2 Longitudinal Joints

Longitudinal joints between strips shall be parallel to the centerline. In multiple lift construction, the longitudinal joints between strips in each lift shall be constructed not less than 6 inches [150 mm] measured transversely from the longitudinal joints in the previously placed lift. When the wearing course is constructed in an even number of strips, one longitudinal joint shall be on the centerline of the road. When it is constructed in an odd number of strips, the centerline of one strip shall be on the centerline of the road, provided that no joint is located in the wheel path area of a traffic lane. Longitudinal joints in multiple lift construction over Portland cement concrete pavements may be aligned directly over the concrete pavement longitudinal joints at the discretion of the Engineer.

At longitudinal joints formed by placing multiple strips, the adjoining surface being laid shall, after final compacting, be slightly higher (but not to exceed 1/8 inch [3 mm]) than the previously placed strip. When constructing a strip adjoining a previously placed strip or a concrete pavement, any fresh mixture that overlaps a previously placed strip or pavement shall be removed (to the longitudinal joint line) before any rolling is done.

G Asphalt Mixture Production (FOB Department Trucks)

For asphalt mixture production, the Contractor shall, in addition to the asphalt mixture required on the Project, produce and deliver asphalt mixture to the Department. The mixture shall be the mixture being produced and shall be loaded on Department furnished trucks at the mixing plant at a time agreed on by the Engineer and Contractor. The Engineer will notify the Contractor of the total quantity of mixture desired not less than 2 weeks prior to completion of the wearing course construction. The Engineer will not accept the asphalt mixture if it is inappropriate for the Department's intended use.

H Small Quantity HMA Paving

Unless otherwise indicated in the Special Provisions, the following provision for a small quantity of asphalt mixture shall apply.

A Mixture Design Report is not required for planned project quantities less than 9,000 square yard inches (4,500 square yards per 2 inch thickness, etc) [191,200 m^2 mm] or 500 tons [450 metric tons]. However, the Contractor shall verify in writing the asphalt mixture delivered to the project meets the requirements of Table 2360.3-B2a and Table 2360.3B2b. The Department will obtain samples, as determined by the Engineer, to verify mixture requirements. These results will be used for material acceptance. Acceptance of material will be in accordance with the criteria outlined in Section 2360.4L1, L2, L3, and L8.

2360.6 PAVEMENT DENSITY

A General

All pavements will be compacted in accordance with the Maximum Density Method unless otherwise specified in the Contract special provisions or as noted in Section 2360.6C. Density evaluation will be for both compacted mat density and compacted longitudinal joint density on those projects utilizing gyratory design.

B Maximum Density Method

All courses or layers of plant mixed asphalt mixtures for which the Maximum Density Method is used shall be compacted to a density not less than the percentage shown in the Table of Required Density, Tables 2360.6-B2 and 2360.6-B2 LJ, for the applicable mixture and course and longitudinal joint type (i.e. confined or unconfined). Longitudinal joint density will not be evaluated on those lifts, which have a 1% reduced density requirement. If the Contractor elects to waive the 1% reduced density requirement as per 2360.6B4, then the Longitudinal Joint Density will be a requirement.

B1 Maximum Density Determination

The Density requirements listed in Table 2360.6B2 are percent of maximum specific gravity (G_{mm}) based on the individual lot. The Maximum specific gravity value used to calculate the percentage density for the lot shall be the average value obtained from the maximum gravity results from production tests taken during that days paving. If only one or two maximum specific gravity values were obtained that day, then the moving average value (at that test point) shall be used. If three or more maximum specific gravity values are obtained that day, then the average of those tests alone shall be used as indicated above.

B1a Pavement Density Determination

The density of each lot shall be expressed as a percentage of the maximum specific gravity (% G_{mm}) obtained by dividing the average bulk specific gravity for the lot by the maximum specific gravity multiplied by 100, (maximum specific gravity basis is the average G_{mm} of QC tests done on the day that the individual lot was paved as described above). Determination of the bulk specific gravity of the cores shall be in accordance with AASHTO T-166, Mn/DOT modified. For coarse graded mixtures the Engineer may require determination of bulk specific gravity of the cores be in accordance with ASTM D6752 Mn/DOT modified (Corelok). Both the Contractor and Mn/DOT shall use the same test method to determine bulk specific gravity. **The**

determination of coarse and fine graded mixtures will be based on the percentage of material passing the #8 sieve [2.365 mm] as defined in Table 2360.3-B2c.

Compaction operations shall be completed within 8 hours of mixture placement and before core samples are obtained for density determination. Only pneumatic tired or static steel rollers are permitted for any compactive effort performed between 6 and 8 hours after mixture placement.

Compacted mixtures represented by samples or tests having deficient densities shall not be re-rolled. The Contractor shall not operate below the specified minimum density on a continuing basis. A continual basis shall be defined as all lots in a day's production failing to meet minimum density or more than 50% of lots on multiple days which fail to meet minimum density requirements. Production shall be stopped until the source of the problem is determined and corrective action is taken to bring the work into compliance with specified minimum required density.

B2 Required Density

Minimum density requirements for gyratory (SP) designed mixtures are listed in Table 2360.6-B2. Minimum density requirements for longitudinal joint are listed in Table 2360.6-B2 LJ.

Unless otherwise indicated in the Plans or Special Provisions, shoulders wider than 6 feet [1.8 meters] paved shall be compacted by the Maximum Density Method. When shoulders are required to be compacted by the Maximum Density Method and are paved in a separate operation or have a different required minimum density than the driving lane, the lot tonnage placed on the shoulder shall be delineated in separate lots from the driving lanes for the day paving was conducted.

Unless otherwise indicated in the Plans or Special Provisions a narrow shoulder, 6 feet [1.8 meters] or less wide, that is paved in the same pass as a driving lane or that is paved separately will be compacted by the Ordinary Compaction Method. Mixture compacted under Ordinary Compaction is excluded from lot density requirements and that tonnage is also excluded from incentive/disincentive payment.

If the Plans or Special Provisions indicate a narrow shoulder is to be compacted by the Maximum Density Method, the minimum required density is listed in Table 2360.6-B2. If the minimum required density of the shoulder is different than the driving lane, the tonnage placed on the shoulder shall be delineated in separate lots from the driving lane.

Echelon paving (two pavers running next to each other in adjacent lanes) shall be considered separate operations.

Table 2360.6-B2
Required Minimum Lot Density (Mat)

	SP Wear Mixtures (1)(2)	SP Nonwear (1)(2)	SP Shoulders (1)(2)	
			Designed at 3% voids	Designed at 4% voids
% Gmm	92.0	93.0	93.0	92.0

1) Minimum reduced by one percent on the first lift constructed over PCC pavements.
2) Minimum reduced by one percent for the first lift constructed on aggregate base (mainline and shoulder), reclaimed or cold inplace recycled base courses and first lift of an overlay on a roadway with a 7 ton [6.35 metric ton] or less spring load restriction (roadway includes shoulders).

Table 2360.6-B2LJ
Longitudinal Joint Density Requirement

Location	Percent Density	
	Confined Edge* of Mat	Unconfined Edge* of Mat
Long. Joint -- Wear & Shoulder (4% air voids)	89.0	86.5
Long. Joint -- Non-Wear & Shoulder (3% air voids)	90.0	87.5

Note: *Confined shall be defined as the edge(s) of the placed mat abutting another mat, pavement surface, or curb and gutter. Unconfined or unsupported means there is no abutment of the side of the mat being placed with another mat, pavement surface, etc.

B2a Lots & Core Locations

Table 2360.6-B2a
Lot Determination

Daily Production		Lots
English (Ton)	[Metric (ton)]	
300* – 600	[270* –545]	1
601 – 1,000	[546 – 910]	2
1,001 – 1,600	[911 – 1,455]	3
1,601 – 3,600	[1,456 – 3,275]	4
3,601 – 5,000	[3,276 – 4,545]	5
5,001 +	[4,546 +]	6

*When mix production is less than 300 tons [270 metric tons], establish 1st lot when accumulative tonnage exceeds 300 tons [270 metric tons].

Compacted Mat Density

Divide the days production into equal lots as shown in Table 2360.6-B2a. The Engineer may require additional density lots be established to isolate areas affected by equipment malfunction/breakdown, heavy rain, or other factors that may affect the normal compaction operations. Obtain four cores in each lot. Two cores will be taken from random locations selected by the Engineer. The third and fourth cores (the companion cores) shall be taken within 1 foot [0.3 meters] longitudinally from the first two cores. All companion cores shall be given to the Department Street Inspector immediately upon completion of coring and sawing. The random locations will be determined by the Engineer using statistically derived stratified random number tables or other approved methods of random number generation. These will also be used for partial lots. If the random core location falls on a longitudinal joint cut the core with the outer edge of the core barrel 1 foot [0.3 meters] away (laterally) from the edge of the top of the mat (joint). Cores for compacted mat density will not be taken within 1 foot [300 mm] of any longitudinal joint. The Contractor shall be responsible for maintenance of traffic, coring, patching the core holes, and sawing the cores if necessary to the proper thickness prior to density testing.

Longitudinal Joint Density

Longitudinal joint density will be evaluated at random lots, as determined by the Engineer near the end of the days paving operation, for 20% of the lots established for compacted mat density (Table 2360.6-B2a). Determine the number of lots for longitudinal joint density by multiplying the number of lots calculated for mat density by 0.20 and rounding up to the next higher whole number. There is a minimum requirement of 1 lot per day for longitudinal joint density evaluation.

Within lots designated as Longitudinal Joint Density lots, the Contractor will take the 4 cores per lot requirement for mat density, plus the Contractor shall take an additional 4 cores for longitudinal joint density. Cores for longitudinal joint density shall be taken at one of the locations (station) where cores are taken for "mat density". This determination will be made at random. A total of 6 cores will be at this location (station). Cores for

longitudinal joint density will be taken on both sides of the lane being paved. These "edge cores" shall be cut with the outer edge of the core barrel within 6 inches (150 mm) from the edge of the top of the mat for both confined and unsupported edges. Companion cores shall be taken within 1 foot [0.3 meters] longitudinally from each "edge core". The 2 cores for "mat density" (regular and companion core) shall be taken either 2 feet right or 2 feet left of the center of the lane being paved, regardless of random number generation.

When the shoulder and driving lane are pulled in the same paving pass there is no longitudinal joint between the driving lane and shoulder. In these cases where there is no longitudinal joint do not cut a core on the imaginary line where there would have been a joint. The decision as to where to take the edge core or whether an edge core is taken is based on the shoulder density requirement.

If the shoulder is to be compacted by the Ordinary Compaction Method there will only be 2 coring locations: the centerline longitudinal edge cores (6" from the joint) and the mat density cores (2' right or left of the center of the driving lane). In the density incentive/disincentive spreadsheet select "No Core" for what would have been the core next to the shoulder. This will assign a pay factor of 1.00 to this location. The centerline longitudinal joint core, taken 6" from the joint, is either confined or unconfined.

If the shoulder is compacted by the Maximum Density Method there will be 3 coring locations: the centerline longitudinal edge cores (6" from the joint), the mat density cores (2' right or left of the center of the driving lane), and the edge of the shoulder (6" from the outside edge). Again, no core is cut on the imaginary line at the edge of the shoulder adjacent to the driving lane but that coring location is moved all the way to the edge of the shoulder (6" inside the edge). The centerline longitudinal joint core and edge cores are taken 6" from the joint and will be either confined or unconfined.

B3 Core Testing

Cores will be taken and tested by the Contractor. Core locations will be determined and marked by the Engineer. The Contractor shall schedule the approximate time of testing during normal Project work hours so that the Engineer may observe and record the saturated surface dry and immersed weight of the cores.

Density determination will be made by the end of the next working day after placement and compaction. If multiple layers are placed in a single day, cores shall be sawn and separated for each layer, tested and reported by the end of the next working day.

The Contractor will cut pavement samples from the completed work with power equipment, and restore the surface by the end of the next working day with new, well compacted mixture without additional compensation. Failure to restore the surface within 24 hours of coring shall subject the Contractor to a fine of $100 per working day, per lot, until the core holes are restored. Cores shall be cut using a 4 inch [100 mm] minimum outer diameter coring device. All samples shall be marked with the lot number and core number or letter. The cores shall be transported to the laboratory as soon as possible to prevent damage due to improper handling or exposure to heat. These companion cores may be tested by the Inspector on Department scales or transported to the Department's Field Laboratory or District Materials Laboratory.

Measure each core three times for thickness prior to saw cutting; report the average lift thickness on the core sheet. These average thicknesses will contribute to thickness compliance as described in Section 2360.7A

Companion Core Testing

The Department will select at least one of the two companion cores per lot to be tested. However, the Department may elect to test **all** companions to provide a direct verification of all individual and daily average test results. For lots designated as Longitudinal Joint Density lots, the Agency will test at least one of the Mat Density companion cores and at least one of the Longitudinal Joint Density companion cores.

Verification of the Contractor and Agency core bulk specific gravities will involve two comparisons. The first comparison will compare core bulk specific gravities of the Contractor's individual cores and

the corresponding Agency companion cores. The second comparison will compare the "days' average" core bulk specific gravities of Contractor and Agency tests.

The comparison of the individual core bulk specific gravities will have a tolerance of 0.030 between the Contractor's bulk specific gravity and the Agency's bulk specific gravity. If the tolerance is exceeded, the Agency's result will be substituted for the Contractor's result.

For the comparison of the Contractor and Agency "days' average" bulk specific gravities use only those tests that meet the 0.030 individual tolerance and compare the average of the Contractor specific gravities with the average of the Agency specific gravities. The tolerance will be variable depending on how many samples are compared and will be equal to 0.030 divided by the square root of the number of samples compared ($0.030/\sqrt{n}$). If this tolerance is exceeded, all the Agency's test results will be substituted for the Contractor's results for that day's paving.

The Engineer may allow re-coring of a sample only when the core has been damaged through no fault of the Contractor, either during the coring process or in transit to the laboratory.

The Agency may elect to develop and make available to the Contractor, an Internet data collection tool, to collect and analyze density core bulk specific gravity data. In this case, the Contractor may voluntarily use this tool to input density core data. In such a case, the Agency would use the data to determine the reliability of the Contractor's density core data. If the analysis finds an acceptable level of reliability, the Agency could authorize a reduction of coring frequency for companion cores to one Agency companion for every two Contractor's cores.

B4 Maximum Density Acceptance and Payment Schedule

The density of compacted mixture shall be accepted by pavement cores on a lot basis.

The Contractor's cores will be used for acceptance, after the Agency result substitutions have been made, as stipulated above. Payment factors for mat density and longitudinal joint density are listed in Tables 2360.6-B4, 2360.6-B4b LJ, and 2360.6-B4c LJ shown below. Incentive and disincentive payments are for both wearing and non-wearing courses. However, incentive payment for longitudinal joint density will be limited to only those lots in which longitudinal joint density has been evaluated.

When the density requirement has been reduced by one percent, per Table 2360.6-B2, footnote 1 & 2, payment adjustments for lot densities will be made as specified in Table 2360.6-B4a. Incentive payments are excluded when the minimum density has been reduced. However, at the Contractors request and with approval of the Engineer, the reduced density requirement may be waived and density evaluated under Table 2360.6-B4, including incentives, for first lift constructed on aggregate base, reclaimed or cold inplace recycled base courses and first lift of an overlay on a roadway with a 7 ton [6.35 metric ton] or less spring load restriction (reduced density shall not be waived for the first lift constructed on PCC pavements). The request and approval shall be made after the first days paving and before the third days paving begins. Once the request has been approved, evaluation of density will be in accordance with Table 2360.6-B2 (excluding footnote 2) and Table 2360.6-B4, and will remain in effect for the duration of mixture placement on that lift. The Contractor will also be responsible for compliance with any construction requirements on subsequent lifts.

Table 2360.6-B4
Payment Schedule for Maximum Mat Density

% Density [2] SP Wear, and SP Shld (4% Void)	% Density [2] SP Non-Wear, SP Shoulders (3% Void)	
93.6 and above	94.6 and above	1.04 [3]
93.1 – 93.5	94.1 – 94.5	1.02 [3]
92.0 - 93.0	93.0 - 94.0	1.00
91.0 - 91.9	92.0- 92.9	0.98
90.5 - 90.9	91.5 - 91.9	0.95
90.0 - 90.4	91.0 - 91.4	0.91
89.5 - 89.9	90.5 - 90.9	0.85
89.0 - 89.4	90.0 - 90.4	0.70
Less than 89.0	Less than 90.0	[4]

Table 2360.6-B4A [1]
1% Reduced Table

Percent of Max Specific Gravity [2] SP Wear, and SP Shld (4% Void)	Percent of Max Specific Gravity [2] SP Non-Wear, and SP Shoulders (3% Void)	Percent Payment
91.0 and above	92.0 and above	100
90.0 - 90.9	91.0- 91.9	98
89.7 - 89.9	90.5 - 90.9	95
89.4 - 89.6	90.0 - 90.4	91
89.2 - 89.3	89.5 –89.9	85
89.0 - 89.1	89.0 - 89.4	70
Less than 89.0 [4]	Less than 89.0	[4]

Table 2360.6-B4a LJ [5]
Payment Schedule for Longitudinal Joint Density
(SP Wear, and SP Shld (4% Void))

% Density [2] Long. Joint (Confined Edge)	**Pay Factor B** (Confined Edge)	% Density [2] Long. Joint (Unsupported Edge)	**Pay Factor C** (Unsupported Edge)
91.6 and above	1.02 [3]	89.6 and above	1.02 [3]
91.1-91.5	1.01 [3]	89.1-89.5	1.01 [3]
89.0-91.0	1.00	86.5-89.0	1.00
88.0-88.9	0.98	85.5-86.4	0.98
87.5-87.9	0.95	85.0-85.4	0.95
87.0-87.4	0.91	84.5-84.9	0.91
86.5-86.9	0.85	84.0-84.4	0.85
Less than 86.5	0.70	Less than 84.0	0.70

Table 2360.6-B4b LJ [5]
Payment Schedule for Longitudinal Joint Density
(SP Non-Wear, and SP Shoulders (3% Void))

% Density [2] Long. Joint (Confined Edge)	Long. (Confined Edge)	% Density [2] Long. Joint (Unsupported Edge)	(Unsupported Edge)
92.6 and above	1.02 [3]	90.6 and above	1.02 [3]
92.1-92.5	1.01 [3]	90.1-90.5	1.01 [3]
90.0-92.0	1.00	87.5-90.0	1.00
89.0-89.9	0.98	86.5-87.4	0.98
88.5-88.9	0.95	86.0-86.4	0.95
88.0-88.4	0.91	85.5-85.9	0.91
87.5-87.9	0.85	85.0-85.4	0.85
Less than 87.5	0.70	Less than 85.0	0.70

(1) Minimum reduced by one percent for the first lift constructed on aggregate base (mainline and shoulder), reclaimed or cold inplace recycled base courses and first lift of an overlay on a roadway with a 7 ton [6.35 metric ton] or less spring load restriction (roadway includes shoulders). Minimum reduced by one percent on the first lift constructed on PCC pavements (reduced density cannot be waived).

(2) In calculating the percent of maximum specific gravity, report to the nearest tenth.

(3) The payment in this portion of the specification shall apply only if the day's weighted average individual production air voids are within - 0.5 percent of the target air void value. The weighted average air voids shall be based on all the mixture production tests (2360.4e) for the corresponding day and shall be weighted by the tons the corresponding test represents.

(4) The HMA material represented by the lot shall be paid at a 70% pay factor, unless a single core density is less than 87.0% of the maximum specific gravity (Gmm). If a single core density is less than 87.0% of Gmm, the Engineer will decide whether the mixture is subject to removal and replacement or reduced payment. Reduced payment will be 50 percent of the Contract bid price. If the mixture is to be removed and replaced, the Contractor at his expense will remove and replace with mixture that meets the density requirement. The limits of the area to be removed and replaced will be determined by additional core samples. These additional core samples shall be taken at the same offset from centerline as the original core; unless the original low density core was taken within 1.5 feet [0.45 m] of an edge of the paver pass. In that case, the additional cores shall be taken 1.5 feet [0.45 m] from the edge of the paver pass. The densities shall be determined at 50 foot [15 m] intervals, both ahead and back of the point of unacceptable core density (less than 87.0% of Gmm), until a point of acceptable core density (87.0% of Gmm or greater) is found. If the incremental core density testing extends into a previously accepted lot, removal of the unacceptable material will be required; however, the results of these tests shall not be used to recalculate the previously accepted lot density. All costs incurred from additional coring and testing, resulting from unacceptable core density, will be paid by the Contractor. The unacceptable pavement area is to be computed as the product of the longitudinal limits so determined by the 15 m **[50 foot]** cores and the full width of the paver pass, laying in the traffic lane or lanes. Shoulders shall be exempt from this calculation unless density failure occurred in the shoulder area.
After the unacceptable material (core density less than 87.0% of Gmm) has been removed and replaced, the density of the replacement material will be determined by the average of two cores. Payment for the replacement material will be in accordance with Tables 2360.6-B4 or 2360.6-B4, whichever applies. There will be no payment for the material removed. The remainder of the original lot shall have a 70% pay factor.

(5) Incentive payment for longitudinal joint density will be limited to only those lots in which longitudinal joint density has been evaluated.

Pay Factor Determination

The total pay factor will be determined by selecting one of the following three cases based on longitudinal joint construction i.e., whether the edges of the mat (right and left) are confined or unsupported. Confined shall be defined as the edge(s) of the placed mat abutting another mat, pavement surface, or curb and gutter. Unsupported means there is no abutment of the side of the mat being placed with another mat, pavement surface, etc.

Case 1) Total Pay Factor = (Pay Factor A) X (Pay Factor B) X (Pay Factor C)
Case 2) Total Pay Factor = (Pay Factor A) X (Pay Factor B) X (Pay Factor B)
Case 3) Total Pay Factor = (Pay Factor A) X (Pay Factor C) X (Pay Factor C)

Where: Pay Factor A is for mat density
Pay Factor B is confined edge density, and
Pay Factor C is for unsupported edge density

Note: Use a pay factor of 1.00 for Pay factor B and/or Pay factor C in lots where no cores are taken at the longitudinal joint.

C Ordinary Compaction Method

Ordinary compaction shall be used for layers identified in the typical sections with a minimum planned thickness of less than 1 1/2 inches [40 mm], thin lift leveling, wedging layers, patching layers, driveways, areas which cannot be compacted with standard highway construction equipment. Unless otherwise indicated in the Plans or Special Provisions recreational trails shall also be compacted by ordinary compaction. The ordinary compaction method shall not be used on mainline, ramp, or loop paving, unless otherwise designated in the plans or special provisions. When density is evaluated by the ordinary compaction method a control strip shall be used to establish a rolling pattern. This shall be used by the Contractor for the compaction of the asphalt mixture for the layer on which the control strip is constructed, or until a new control strip is constructed. The control strip requirement may be waived, by the Engineer, in small localized areas or other areas not conducive to its establishment.

A control strip shall be constructed at the beginning of the work on each lift of each course. Each control strip shall have an area of at least 395 square yards [330 m^2] and shall be of the same thickness as the lift it represents. The subgrade or pavement course upon which a control strip is to be constructed shall have the prior approval of the Engineer. The control strips shall remain in place and become part of the completed work.

The materials used in the construction of the control strips shall conform to the specified requirements for the course. The materials used in the control strip shall be from the same source and of the same type as the materials used in the remainder of the course that the control strip represents.

The equipment used in the construction of the control strips shall be approved by the Engineer and shall be the same type and mass used on the remainder of the pavement course represented by the control strip. A minimum of two rollers shall be required. A rolling pattern shall be established for each roller. A pneumatic tired roller shall be available for compaction operations within 24 hours after request by the Engineer. The final rolling shall be performed with a tandem steel-wheeled roller. Areas that are inaccessible to the conventional type rolling equipment shall be compacted to the required density by using trench rollers or mechanical tampers.

Construction of the control strips will be as directed by the Engineer. Compaction shall commence as soon as possible after the mixture has been spread to the desired thickness and shall continue until no appreciable increase in density can be obtained by additional roller's coverage. Densities will be determined by means of a portable nuclear testing device or suitable approved alternate and a growth curve shall be developed to determine the optimum rolling pattern. The Contractor shall furnish documentation of the growth curve to the Engineer.

To determine when no appreciable increase in density can be obtained, two test points shall be established in the control strip on a random basis and the density at each point shall be measured by a portable nuclear device or suitable approved alternate after each roller pass. Rolling shall be suspended when testing shows either a decline of more than 2% of the maximum specific gravity or when additional roller passes fail to increase the density.

After said testing is accomplished, rolling on the remainder of that course shall be done in accordance with the pattern developed in the test strip for that roller. A separate rolling pattern and time interval shall be established for each roller.

A new control strip shall be ordered by the Engineer when:

(a) A change in the JMF is made, or
(b) A change in the source of material is made or a change in the material from the same source is observed.

A new control strip may be ordered by the Engineer or requested by the Contractor when:

(a) Ten days of production have been accepted without construction of a new control strip, or
(b) There are other reasons to believe that a control strip density is not representative of the HMA mixture being placed.

The nuclear testing device shall be furnished and operated by the Contractor. The furnishing of the testing device and the operator will be considered incidental to the furnishing and placement of the HMA mixture and shall not be compensated for separately. The device shall be calibrated according to procedures described in the Mn/DOT Bituminous Manual.

Each course shall be uniformly compacted until there is no further evidence of consolidation and all roller marks are eliminated. When this method is employed, and the quantity of mixture placed by the paver exceeds 110 tons [100 metric tons] per hour, at least two rollers are required for compacting the mixture placed by each paver.

C1 Rollers

The following requirements for rollers apply only when compaction is obtained by the ordinary compaction method.

C2 Steel-Wheeled Rollers

Steel-wheeled rollers shall be self-propelled and has a minimum total mass of 8 tons [7.3 metric tons], or as otherwise specified in the Contract. When vibratory rollers are used, they shall produce 3,085 lbf per foot [45 kN per meter] of width. The frequency should be at least 2400 vpm and amplitude setting low. The roller shall be capable of reversing without backlash and shall be equipped with spray attachments for moistening all rollers on both sets of wheels.

C3 Pneumatic Tired Rollers

The pneumatic-tired roller shall have a compacting width of 5 feet [1.5 m] or more. It shall be so constructed that the gross wheel load force shall be a minimum of 3,000 pounds [13 kN] per wheel for SP Level 2-3 mixtures and 5,000 pounds [22 kN] per wheel for SP Level 4-6 mixtures and can be varied as directed by the Engineer. The tire arrangement shall be such that full compaction will be obtained over the full width with each pass of the roller.

The roller may be self propelled or provided with suitable tractive equipment, unless otherwise specified in the Contract. If more than one roller is propelled by a single tractive unit, then that combination will be counted as a single roller unit.

C3a Vibratory Pneumatic-Tired Rollers

Vibratory pneumatic-tired rollers shall be self-propelled and have a minimum total mass of 8 tons [7.3 metric tons], or as otherwise specified in the Contract. The compacting width shall be 5 feet [1.5 m] or more. The tire arrangement shall be such that full compaction will be obtained over the full width with each pass of the roller.

C4 Trench Rollers

Trench rollers shall be self propelled and have a mass of not less than 2,960 pounds per foot [4 400 kg per meter] of width.

C5 Mixture Temperature Controls

If compaction is obtained by the ordinary compaction method, the minimum laydown temperature in all courses (as measured behind the paver or spreading machine) of the asphalt mixture shall be in accordance with the temperature requirements of Table 2360.6-C5. Unless directed by the Engineer in writing, no paving is allowed under the Ordinary Compaction Method when the air temperature is below 32°F [0°C].

Table 2360.6-C5
Mixture Temperature Control(C)

Air Temperature	Compacted Mat Thickness, inches(A)			
°F [°C]	1 inch [25 mm]	1-1/2 inch [40 mm]	2 inch [50 mm]	≥3 inch [75 mm]
+32-40 [0-5]	--	265 (B) [129]	255 [124]	250 [121]
+ 41-50 [6-10]	270 (B) [130]	260 [127]	250 [121]	245 [118]
+ 51-60 [11-15]	260 (B) [127]	255 [124]	245 [118]	240 [115]
+ 61-70 [16-21]	250 (B) [121]	245 [118]	240 [115]	235 [113]
+ 71-80 [22-27]	245 [118]	240 [115]	235 [113]	235 [113]
+ 81-90 [28-32]	235 [113]	230 [110]	230 [110]	230 [110]
91+ [+ 33]	230 [110]	230 [110]	230 [110]	225 [107]

(A) Based on approved or specified compacted lift thickness.

(B) A minimum of one pneumatic-tire roller shall be used for intermediate rolling unless otherwise directed by the Engineer. The Engineer may specify or modify in writing (with concurrence from the Department Bituminous Engineer) a minimum laydown temperature.

(C) Not applicable if a WMA additive or process is used.

2360.7 THICKNESS AND SURFACE SMOOTHNESS REQUIREMENTS

A Thickness

After compaction the thickness of each lift shall be within a tolerance of 1/4 inch [6 mm] of the thickness shown in the Plans, except that, if automatic grade controls are used, this thickness requirement will not apply to the first lift placed. This thickness requirement will not apply to a leveling lift whether or not automatic grade controls are required. The Engineer may require removal and replacement, at the Contractor's expense, of any part of any lift that is constructed to less than the minimum required thickness.

Cores taken for density determination shall be measured for thickness also. Each core shall be measured 3 times for thickness prior to sawing. Report the average of these three measurements. Each lot's average core thickness shall be documented and submitted to the Engineer. If the average of the two Contractor cores exceed the specified tolerance, an additional two cores may be taken in the lot in question. The average of all core thickness measurements per day per lift will be used to determine daily compliance with thickness specifications.

On that portion of any lift constructed to more than the maximum permissible thickness, the materials used in the excess mixture above that required to construct that portion of the lift to the Plan thickness plus 1/4 inch [6 mm] may be excluded from the pay quantities and at the discretion of the Engineer and at the Contractor's expense may be required to be removed and replaced.

B Surface Requirements

After compaction, the finished surface of each lift shall be reasonably free of segregated, open and torn sections, and shall be smooth and true to the grade and cross section shown on the Plans with the following tolerances:

(1) Where a leveling lift is specified, it shall be constructed to within a tolerance of 1/2 inch [15 mm] of the elevations and grades established by the Engineer. This requirement shall also apply to the first lift placed other than leveling when automatic controls are used.

(2) The surface of the final two lifts placed shall show no variation greater than 6 mm 1/4 inch [6 mm] from the edge of a 10 foot [3 m] straightedge laid parallel to or at right angles to the centerline. Shoulder surfacing and surfacing on temporary connections and bypasses shall show no variations greater than 1/4 inch [6 mm] from the edge of a 10 foot [3 m] straightedge laid parallel to the centerline.

(3) After final compaction, all final lift asphalt wearing surfaces adjacent to concrete pavements shall be slightly higher (but not to exceed 1/4 inch [6 mm] than the concrete surface.

After final compaction, all asphalt surfaces adjacent to gutters, manholes, pavement headers, or other fixed structures shall be slightly higher (but not to exceed 1/4 inch [6 mm] than the surface of the structure.

(4) Transverse joints (construction joints), at the beginning and end of a project, at paving exceptions, or caused by suspension of daily paving operations, shall show no variation greater than 1/4 inch [6 mm] from the edge of a 10 foot [3 m] straightedge centered longitudinally across the transverse joint. The Engineer may require correction by diamond grinding when material is placed outside the above-described limitations.

(5) The transverse slope of the surface of each lift, exclusive of the shoulder wearing lift, shall not vary from the slope shown in the Plans by more than 0.4 percent.

(6) The distance between the edge of each lift and the established centerline shall be no less than the Plan distance nor more than 3 inches [75 mm] greater than the Plan distance. In addition, the edge alignment of the wearing lift on tangent sections and on curve sections of 3 degrees or less shall not deviate from the established alignment by more than 1 inch [25 mm] in any 25 foot [7.5 m] section.

(7) The finished surface of each lift shall be reasonably free of segregated and open and torn sections and deleterious materials.

Any material placed outside the above described limitations shall be removed and replaced after being cut or sawed at no expense to the Department or with the approval of the Engineer, allowed to remain inplace at a reduced cost calculated at $10 per square yard [$12 per square meter]. Any single occurrence of material outside the limitations described above shall be considered to have a minimum dimension of one square yard square [one square meter] in any dimension.

C Pavement Smoothness Specification – IRI (International Roughness Index)

C1 General

Pavement smoothness will be evaluated on the final mainline pavement surface using an Inertial Profiler (IP) and the International Roughness Index (IRI). Unless otherwise authorized by the Engineer, all smoothness testing shall be performed in the presence of the Engineer. The Engineer and the Contractor shall mutually agree upon scheduling of smoothness testing so that testing can be observed. Any testing performed

without the Engineer's presence, unless otherwise authorized, may be ordered retested at the Contractor's expense. The following Table 2360.7-A (IRI) shows pavement surfaces that are excluded from smoothness testing but subject to 2360.7B surface requirements.

Table 2360.7 – A (IRI)
Testing Exclusions

25 foot [7.62 m] feet either side of obstructions such as manholes, water supply castings, etc.*
Ramps, Loops, Climbing lanes
Side Streets, Side Connections
Turn Lanes, Storage Lanes, Crossovers, Bypass Lanes
Shoulders
Intersections constructed under traffic – Begin and end the exclusion100 feet [30.5m] from the intersection radius
Sections less than 25 foot [7.62 m]in length
Acceleration, Deceleration Lanes
Projects less than 1000 feet [300m] in length
Mainline paving where the normally posted regulatory speed is less than or equal to 45 miles per hour [70 km/hr]
Begin the exclusion at the sign
Single lift overlays over concrete

*Mainline shall be included in profiling if obstructions are located in auxiliary or parking lanes

C1A Smoothness Requirements

Pavement smoothness requirements will be evaluated by the International Roughness Index (IRI) Equation A, Equation B, or Equation C. The pavement smoothness Equation will be identified in the Special Provisions of the proposal. Location of bumps and/or dips and magnitude will be based on California Test Method 526.

C2 Measurement

Smoothness will be measured with an IP, which produces both an IRI value and a profilogram (profile trace of the surface tested). The IP shall conform to the Class 1 requirements of ASTM E950-94 and must be certified according to the most recent procedure on file in the Bituminous Office. For pavement evaluation, one pass will be made in the right wheel path of each traffic lane. The IP shall be run in the direction the traffic will be moving. Each lane will be tested and evaluated separately. The Engineer will determine the length in miles [kilometers] for each mainline traffic lane. The IP shall be operated at the optimum speed as defined by the manufacturer.

C3 Smoothness testing

The Contractor shall furnish a properly calibrated, documented, and MnDOT certified IP. The IP shall be equipped with automatic data reduction capabilities. Computer programs used to calculate the IRI statistic from a longitudinal roadway profile shall follow the procedure developed by the World Bank for a quarter-car simulation as described in NCHRP report 228.

Mn/DOT certification documentation shall be provided to the Engineer on the first day the IP is used on the project. IP settings are on file in the Bituminous Office. The Contractor shall furnish a competent operator, trained in the operation of the IP and evaluation of both California Test Method 526 and the International Roughness Index.

The Contractor shall remove all objects and foreign material on the pavement surface prior to surface evaluation by power brooming.

The pavement surface will be divided into sections which represent continuous placement. A section will terminate 25 foot [7.62 m] before a bridge approach panel, bridge surface, manhole or similar interruption. In the final pavement evaluation, a day's work joint will be included in the trace with no special consideration. A section will be separated into segments of 0.1 mi [0.1 km]. A segment will be in one traffic lane only.

An IRI value shall be computed for each segment of 25 foot [7.62 m] or more. The IRI value will include the 25 foot [7.62 m] at the ends of the section only when the Contractor is responsible for the adjoining surface.

End of run areas not included in the IRI value and any sections of pavement less than 25 foot [7.62m] in length shall be checked longitudinally with a 10 ft [3.028 m] straight edge and the surface shall not deviate from a straight line by more than 1/4 inch in 10 ft [6 mm in 3.028 m]. Transverse joints shall be evaluated by centering the straightedge longitudinally across the transverse joint.

The Contractor shall submit the graphical trace, a summary of the bump(s)/dip(s) locations, the magnitude of the bump(s)/dip(s) and each segment IRI value on the same day as the profiling was conducted.

The Contractor shall submit a final spreadsheet summary of the smoothness data to the Engineer within five calendar days after all mainline pavement placement. The summary shall be signed by the Contractor. The spreadsheet summary shall be in tabular form, with each 0.1 mile [0.1 km] segment occupying a row. Each row shall include the beginning and ending station for the segment, the length of the segment, the final IRI value for the segment, the IRI based incentive/disincentive in dollars for the segment, and the deductions for bump(s)/dip(s) in dollars for the segment. Each continuous run will occupy a separate table and each table will have a header that includes the following: the project number, the roadway number or designation, a lane designation, the mix type of the final lift, the PG binder of the final lift, the date of the final smoothness runs, and the beginning and ending station of the continuous run. The following information shall be included at the bottom of each summary: a subtotal for the IRI based incentive/disincentive, a subtotal for the bump deductions, and a total for incentive/disincentive for both IRI values and bumps. Software to summarize the data is available from the Mn/DOT Bituminous Office at www.mrr.dot.state.mn.us/pavement/bituminous/bituminous.asp.

The Contractor will be responsible for all traffic control associated with the smoothness testing and any corrective action (when applicable) that is required of the final pavement surface.

C3A Retesting

The Engineer may require any portion or the total project to be retested if the results are questioned. This includes both IRI values and bump/dip locations. The Engineer will decide whether Mn/DOT, an independent testing firm (ITF), or the Contractor will retest the roadway surface.

If the retested IRI values differ by more than 10% from the original IRI values, the retested values will be used as the basis for acceptance and any incentive/disincentive payments. In addition, bump/dip locations as shown by the retest will replace the original results.

If the Engineer directs the Contractor or an independent testing firm to perform retesting and the original results are found to be accurate, the Department will pay the Contractor or the independent testing firm $62.14 per lane km [$100 per lane mile] that is retested, with a minimum charge of $500.00. The Contractor will be responsible for any costs associated with retesting if the original values differ by more than 10% from the retested values.

C4 IRI Values

The IP shall be equipped with automatic data reduction capabilities for determining the IRI values. An IRI value shall be calculated for each segment of the final pavement surface. Segments greater than or equal to 7.62 m [25 feet] and less than 161m [528 feet] shall be evaluated as a separate segment. The IRI values shall be determined by following NCHRP report 228. The IRI values shall be reported in units of inches per mile [m per

km]. Report inches per mile with one digit right of the decimal and for m per km report with two digits right of the decimal. Follow Mn/DOT rounding procedures per the Bituminous Manual section 5-693.730.

C4a Bumps and Dips – IRI Equation A and IRI Equation B

Bump/dip location will be determined in accordance with California Method 526. Bumps and dips equal to or exceeding 0.4 inch in a 25 ft [10.2 mm in a 7.62 m] span shall be identified separately. When the profile trace shows a successive, uninterrupted bump, dip; or dip, bump combination (up to a maximum of 3 alternating trace deviations that relate to one bump or dip on the roadway), identify and evaluate these occurrences as one event.

The Contractor shall correct, by diamond grinding, all areas represented by bumps or dips of 0.4 inch [10.2 mm] or more as measured by California Test Method 526. However, the Engineer may allow bumps or dips of 0.4 inches to 0.6 inches [10.2 mm to 15.2 mm] in a 25 foot [7.62 m] span to be left uncorrected, and in such case, the contractor will be assessed a price deduct as specified in section C6 ("Payment") of this special provision.

Corrected dips or bumps will be considered satisfactory when the profilogram shows the deviations are less than 0.4 inch in a 25 foot [10.2 mm in a 7.62 m] span.

C4b Bumps and Dips – IRI Equation C

Bump/dip location will be determined in accordance with California Method 526. Bumps and dips equal to or exceeding 0.5 inch in a 25 ft [12.7 mm in a 7.62 m] span shall be identified separately. When the profile trace shows a successive, uninterrupted bump, dip; or dip, bump combination (up to a maximum of 3 alternating trace deviations that relate to one bump or dip on the roadway), identify and evaluate these occurrences as one event.

The Contractor shall correct, by diamond grinding, all areas represented by bumps or dips of 0.5 inch [12.7 mm] or more as measured by California Test Method 526. However, the Engineer may allow bumps or dips of 0.5 inches to 0.7 inches [12.7 mm to 17.8 mm] in a 25 foot [7.62 m] span to be left uncorrected, and in such case, the contractor will be assessed a price deduct as specified in section C6 ("Payment") of this special provision.

Corrected dips or bumps will be considered satisfactory when the profilogram shows the deviations are less than 0.5 inch in a 25 foot [12.7 mm in a 7.62 m] span.

C5 Surface Correction

Unless otherwise approved by the Engineer, corrective work shall be by diamond grinding. Other methods may include; overlaying the area, or replacing the area by milling and inlaying. The Engineer shall approve of the Contractor's method of correcting segment(s) prior to the Contractor starting corrective work. Any corrective actions by milling and inlay or overlay shall meet the specifications for ride quality over the entire length of the correction, including the first and last 25 foot [7.62 m]. Bumps or dips in excess of 0.4 inches [10.2 mm] where evaluation is by Equation A or B or bumps or dips in excess of 0.5 inch [12.7 mm] where evaluation is by Equation C that are located at transverse joints at areas of corrective actions utilizing overlay or milling and inlay, shall be removed by diamond grinding. The Contractor shall notify the Engineer prior to commencement of the corrective action. If the surface is corrected by overlay, inlay or replacement, the surface correction shall begin and end with a transverse saw cut. Surface corrections shall be made prior to placing permanent pavement markings. In the event that permanent pavement marking are damaged or destroyed during surface correction activities, they will be replaced at no cost to the Agency.

When pavement smoothness evaluation by Equation A is specified the Engineer may require that the Contractor, at no expense to the Department, correct segments with an IRI greater than 65 inches/mile [1.03 m per km] **or** the Engineer may assess a $900 per 0.1 mile [$560 per 0.1 km] penalty in lieu of requiring corrective work.

When pavement smoothness evaluation by Equation B is specified the Engineer may require that the Contractor, at no expense to the Department, correct segments with an IRI greater than 75 inches/mile [1.18 m per km] **or** the Engineer may assess a $675 per 0.1 mile [$420 per 0.1 km] penalty in lieu of requiring corrective work.

When pavement smoothness evaluation by Equation C is specified the Engineer may require that the Contractor, at no expense to the Department, correct segments with an IRI greater than 85 inches/mile [1.34 m per km] **or** the Engineer may assess a $450 per 0.1 mile [$280 per 0.1 km] penalty in lieu of requiring corrective work.

Bump, dip, and smoothness correction work shall be for the entire traffic lane width. Pavement cross slope shall be maintained through corrective areas.

All corrective work shall be subject to the approval of the Engineer. After all required corrective work is completed a final segment(s) IRI value and bump/dip tabulation shall be determined and submitted to the Engineer. Corrective work and re-evaluation shall be at the Contractor's expense.

Segments requiring grinding will be re-profiled within two working days of completion of grinding. Individual bumps/dips and segments requiring grinding shall be completed with 15 working days of notification.

C6 Payment

The cost of traffic control for certified smoothness testing and/or any corrective work is incidental to the cost of the Wear course mixture.

The Contractor may receive an incentive payment or be assessed a penalty based on the number of segments and the IRI value. The total ride incentive shall not exceed 10% of the total mix price for pavement smoothness evaluated under IRI Equation A, 5% of the total mix price for pavement smoothness evaluated under Equation B, or 5% of the total mix price for pavement smoothness evaluated under Equation C. Total mix shall be defined as **all** mixture placed on the project. Only those segments which have had no corrective work or work to improve the ride are eligible for IRI incentive payment. Incentive payment for IRI will be based on the roadway segment before corrective work is performed. Grinding of the segment into incentive payment or grinding of the segment in order to obtain a higher incentive payment is not allowed. IRI incentive payment is independent of pay adjustment for bumps and dips.

The Contractor will not receive a net incentive payment for ride if more than 25% of all density lots (excluding longitudinal joint density) for the project fail to meet minimum density requirements.

For pavement smoothness evaluated under Equation A uncorrected bumps or dips greater than or equal to 0.4 inches [10.2 mm] in a 25 foot [7.62 m] span will be assessed a price deduction of $900 per event.

For pavement smoothness evaluated under Equation B uncorrected bumps or dips greater than or equal to 0.4 inches [10.2 mm] in a 25 foot [7.62 m]span will be assessed a price deduction of $675 per event.

For pavement smoothness evaluated under Equation C uncorrected deviations (bumps or dips) greater than or equal to 0.5 inches [12.7 mm] in a 25 foot [7.62 m] span will be assessed a price deduction of $450 per event.

Combinations of bumps and dips which arise from the same single bump or dip are considered to be one event, and shall be counted only once for the purposes of calculating price deductions. Typically, bump-dip-bump combinations, or dip-bump-dip combinations, that are confined to a 30 feet longitudinal segment are considered to be one event.

Bumps or dips resulting from a construction joint will be assessed a $900 penalty, regardless of the IRI Equation used for evaluation or pavement smoothness.

Incentive/disincentive payments will be based on the IRI determined for each segment and will be based on the following equations and criteria.

C6a Inches/mile [IRI m/km]	**IRI Equation A*** Incentive/Disincentive $/0.1mile [$/0.1km]
< 30 inches/mile [<0.47 m/km]	$400 [$249]
30 inches/mile to 65 inches/mile [0.47 m/km to 1.03 m/km]	$850 – (IRI x 15) [$523 – (IRI x 584)]
> 65 inches/mile [>1.03 m/km]	-$900 [-$560]
* Typically, 3-lift minimum construction	

C6b Inches/mile [IRI m/km]	**IRI Equation B*** Incentive/Disincentive $/0.1mile [$/0.1km]
< 33 inches/mile [< 0.52 m/km]	$270 [$168]
33 inches/mile to 75 inches/mile [0.52 m/km to 1.18 m/km]	$600 – (IRI x 10) [$373 – (IRI x 395)]
> 75 inches/mile [>1.18 m/km]	-$675 [-$420]
* Typically, 2-lift construction	

C6c Inches/mile [IRI m/km]	**IRI Equation C*** Incentive/Disincentive $/0.1mile [$/0.1km]
< 36 inches/mile [< 0.57 m/km]	$180 [$112]
36 inches/mile to 85 inches/mile [0.57 m/km to 1.34 m/km]	$414 – (IRI x 6.5) [$258 – (IRI x 257)]
> 85 inches/mile [>1.34 m/km]	-$450 [-$280]
* Typically, single lift construction	

2360.8 METHOD OF MEASUREMENT

A Asphalt Mixture

Asphalt mixture of each type will be measured separately by mass, based on the total quantity of material hauled from the mixing plant, with no deductions being made for the asphalt materials.

B Blank

C Asphalt Mixtures Measured by the Square Yard [Square Meter] per Specified (inch [mm]) and for Mixtures Measured by the Square Yard inch

Asphalt mixture of each type and for each specific lift will be measured separately by area and by thickness on the basis of actual final dimensions placed. The constructed thickness shall meet tolerances set forth in Sections 2360.7A.

EQUAL EMPLOYMENT OPPORTUNITY (EEO) SPECIAL PROVISIONS

This section of Special Provisions contains the Equal Employment Opportunity (EEO) rules and regulations for highway construction projects in Minnesota which are federally and/or State funded.

The source of funding determines which EEO regulations and goals (Federal and/or State goals) apply to a specific project. When a project contains funding from both Federal and State sources, both sets of regulations apply, and the Minnesota Department of Transportation (Mn/DOT) monitors and reviews projects at both levels.

If the project contains any Federal funding, and has a total dollar value exceeding $10,000, Federal EEO regulations and goals apply (pages 2, 6, 7-8, 9-14, 15, 16-17, 22-26, 27-38). The Mn/DOT Office of Civil Rights monitors and reviews these projects on behalf of the Federal Highway Administration (FHWA), under Federal statutes (23 USC 140) and rules (23 CFR 230).

If the project contains any State funding, and has a total dollar value exceeding $100,000, State EEO regulations and goals apply (pages 2, 3, 4, 5, 6, 9-14, 16-22). Mn/DOT's Office of Civil Rights monitors and reviews these projects in conjunction with the Minnesota Department of Human Rights under Minnesota Statutes §363A.36 and its accompanying rules.

Mn/DOT has established a single review and monitoring process which meets both Federal and State requirements.

Please note that Pages 23-38 of these Special Provisions may be omitted from projects with no Federal funding.

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Minnesota Department of Transportation
Office of Civil Rights

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (23 USC 140, 23 CFR 230 and Minnesota Statute 363A.36)

1. The offerer's or bidder's attention is called to the "Minnesota Affirmative Action Requirements" (EEO Page 4), the "Specific Federal Equal Employment opportunity Responsibilities" (EEO Pages 7-8), the "Standard Federal and State Equal Employment Opportunity Construction Contract Specifications" (EEO Pages 9-14), the "Equal Opportunity Clause" (EEO Page 15) and "Required Contract Provisions - Federal-Aid Construction Contracts" (EEO Pages 27-37).

2. The goals and timetables for minority and women participation, expressed in percentage terms of hours of labor for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as shown on EEO Pages 16-17.

   These goals are applicable to all the Contractor's construction work (whether or not it is State or State assisted, Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

   The Contractor's compliance with the regulations in 41 CFR Part 60-4, and/or Minnesota Statutes §363A.36 and its accompanying rules shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a) for Federal or federally assisted projects, and Minnesota Statutes §363A.36, and its accompanying rules for State or State assisted projects, and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and women employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority and women employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4 for Federal or federally-assisted projects and/or Minnesota Statutes §363A.36 and its accompanying rules for state or state-assisted projects. Compliance with the goals will be measured against the total work hours performed.

3. If the contract is federally funded, the Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs (OFCCP) within ten working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. If the contract is state funded, the Contractor shall provide written notification to the Compliance Division, Minnesota Department of Human Rights, Army Corps of Engineers Centre, 190 E 5th Street, Suite 700, St. Paul, Minnesota 55101 within ten working days of award of any construction subcontract in excess of $100,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the Subcontractor; employer identification number of the Subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the county or counties of the State of Minnesota where the work is to be performed.

NOTICE TO ALL PRIME AND SUBCONTRACTORS
PRE-AWARD REPORTING REQUIREMENTS

In order to ensure compliance with Federal and State laws and regulations (23 USC 140, and 23 CFR 230, and Minnesota Statutes §363A.36) and to ensure Mn/DOT's ability to monitor and enforce compliance efforts, the following requirements apply if the apparent low bid exceeds $ 5,000,000.00:

1) The Apparent Low Bidder ("ALB") must provide to Mn/DOT the "EEO-8 Form" (also entitled "EEO Compliance Review Report"), which must provide detail on the contractor's total company workforce in the State of Minnesota during the twelve month period preceding July 30th of the previous year (Office and/or clerical personnel need not to be included).

2) The ALB must provide to Mn/DOT a work plan for meeting the minority and women employment goals established by the Minnesota Department of Human Rights, for the project in question. The work plan must include, at a minimum (1) how the ALB will incorporate its current minority and women employees in the ALB's efforts to meet the established goals; and (2) a contingency plan if the ALB has determined that its current workforce is not sufficient in order to achieve the established employment goals. If the ALB relies in whole or in part upon unions as a source of employees, then the ALB must (1) include a list of established organizations that are likely to yield qualified minority and women candidates if those union(s) are unable to provide a reasonable flow of minority and women candidates in their work plan; and (2) document the method by which these organizations will refer candidates to the ALB for employment opportunities. All bidders are hereby notified that the U.S. Department of Labor has determined that a contractor will not be excused from complying with the Federal and State laws and regulations cited above based solely on the fact that a contractor has a collective bargaining agreement with a union providing for the union to be the exclusive source of referral and that the union failed to refer minority employees. A contractor may obtain a list of organizations likely to yield qualified minority and women candidates from the Mn/DOT Office of Civil Rights.

3) The ALB must provide to Mn/DOT the ALB's total workforce and labor projections for the project (represented in hours), the ALB's projected total number of minority hours for the project, and the ALB's projected total number of women hours for the project. The details must include the trade(s) that will be utilized in order to complete the project.

The ALB must submit documents as required to comply with this section no later than five business days after the date that bids for the contract are opened. The five day period starts the business day following the date that bids were opened. The required documents must be received prior to Contract Award, and must be sent to the Mn/DOT Office of Civil Rights – 395 John Ireland Blvd., Mail Stop 170 St. Paul, MN 55155-1899. Submittal of the documents described in (1), (2) and (3) is required for contract award to the ALB. The submitted documents will be used as a tool to assist contractors in meeting employment goals; the content itself will not be evaluated for the purpose of determining contract award.

MINNESOTA AFFIRMATIVE ACTION REQUIREMENTS

1. It is hereby agreed between the parties to this contract that Minnesota Statutes, Section §363A.36, and its accompanying rules are incorporated into any contract between these parties based upon this specification or any modification of it. A copy of Minnesota Statutes, Section §363A.36, and its accompanying rules is available upon request from the contracting agency. The Contractor hereby agrees to comply with the rules and relevant orders of the Minnesota Department of Human Rights issued pursuant to the Minnesota Human Rights Act.

2. It is hereby agreed between the parties to this contract that this agency requires that the Contractor meet affirmative action criteria as provided for by Minnesota Statutes §363A.36 and its accompanying rules. It is the intent of the Minnesota Department of Transportation to fully carry out its responsibility for requiring affirmative action, and to implement sanctions for failure to meet these requirements. Failure by a contractor to implement an affirmative action plan, meet project employment goals for minority and women employment or make a good faith effort to do so may result in revocation of his/her Certificate of Compliance or suspension or revocation of the contract (Minnesota Statutes §363A.36).

3. Under the affirmative action obligation imposed by the Human Rights Act, Minnesota Statutes, Section §363A.36, contractors shall take affirmative action to employ and advance in employment minority, female, and qualified disabled individuals at all levels of employment. Affirmative action must apply to all employment practices, including but not limited to hiring, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor shall recruit, hire, train and promote persons in all job titles, without regard to race, color, creed, religion, sex, national origin, marital status, status with regard to public assistance, physical or mental disability, sexual orientation or age except where such status is a bona fide occupational qualification. These affirmative action requirements of the Minnesota Human Rights Act are consistent with but broader than the Federal requirements as covered in this contract.

4. Affirmative Action for disabled workers. The Contractor shall not discriminate against any employee or applicant for employment because of a physical or mental disability in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment, and otherwise treat qualified disabled individuals without discrimination based upon their physical or mental disability in all employment practices such as employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training (including apprenticeship). In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with Minnesota Statutes, section §363A.36 and the rules and relevant orders of the Minnesota Department of Human Rights pursuant to the Minnesota Human Rights Act.

5. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the commissioner of the Minnesota Department of Human Rights. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment minority, women and qualified disabled employees and applicants for employment, and the rights of applicants and employees. **A poster entitled "Contractor Non-discrimination is the Law" may be obtained from: Compliance Unit, Minnesota Department of Human Rights, Army Corps of Engineers Centre, 190 E. 5th Street, Suite 700, St. Paul, Minnesota 55101**. (651) 296-5663, TTY 296-1283, Toll Free 1-800-657-3704.

6. The Contractor shall notify each labor union or representative of workers with which he/she has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Minnesota Statutes, section §363A.36 of the Minnesota Human Rights Act, and is committed to take affirmative action to employ and advance in employment minority, women and qualified physically and mentally disabled individuals.

APPROPRIATE WORK PLACE BEHAVIOR ON Mn/DOT CONSTRUCTION PROJECTS UTILIZING STATE FUNDS

It is the Minnesota Department of Transportation's (Mn/DOT's) policy to provide a workplace free from violence, threats of violence, harassment and discrimination. Mn/DOT has established a policy of zero tolerance for violence in the workplace. Contractors who perform work on Mn/DOT construction projects, or local government entities or public agencies utilizing state funds on highway construction projects, shall maintain a workplace free from violence, harassment and discrimination (See definitions, below).

Definitions:

1. Violence is the threatened or actual use of force which results in or has a high likelihood of causing fear, injury, suffering or death. Employees are prohibited from taking reprisal against anyone who reports a violent act or threat.

2. Harassment is the conduct of one employee (toward another employee) which has the purpose or effect of 1) unreasonably interfering with the employee's work performance, and/or 2) creating an intimidating, hostile or offensive work environment. Harassment is not legitimate job-related efforts of supervisor to direct/evaluate an employee or to have an employee improve work performance.

A. Unlawful discriminatory harassment is harassment which is based on these characteristics: race, color, creed, religion, national origin, sex, disability, age, marital status, status with regard to public assistance or sexual orientation. Managers, supervisors and employees shall not take disciplinary or retaliatory action against employees who make complaints of sexual harassment.

Sexual harassment is unwelcome sexual advances, requests for sexual favors, or sexually motivated physical contact, or other verbal or physical conduct or communication of a sexual nature, when submission to that conduct or communication is 1) made a term or condition, either explicitly or implicitly, of obtaining employment; or 2) is used as a factor in decisions affecting an individual's employment; or 3) when that conduct or communication has the purpose or effect of substantially interfering with an individual's employment or creating an intimidating, hostile or offensive work environment, and the employer knows or should have known of the existence of the harassment and fails to take timely and appropriate action. Examples include but are not limited to insulting or degrading sexual remarks or conduct; threats, demands or suggestions that status is contingent upon toleration or acquiescence to sexual advances; displaying in the workplace sexually suggestive objects, publications or pictures, or retaliation against employees for complaining about the behavior cited above or similar behaviors.

B. General harassment is harassment which is not based on the above characteristics. Examples may include, but are not limited to: physically intimidating behavior and/or threats of violence; use of profanity (swearing), vulgarity; ridiculing, taunting, belittling or humiliating another person; inappropriate assignments of work or benefits; derogatory name calling.

3. Discrimination includes actions which cause a person, solely because of race, color, creed, religion, national origin, sex, disability, age, marital status, status with regard to public assistance or sexual orientation to be subject to unequal treatment.

Prime Contractors who work on Mn/DOT projects shall ensure that their managers, supervisors, foremen/women and employees are familiar with Mn/DOT's policy on appropriate work place behavior; and shall ensure that their subcontractors are familiar with this policy. Managers, supervisors and foremen/women will respond to, document, and take appropriate action in response to all reports of violence, threats of violence, harassment or discrimination. Failure to comply with this policy may result in cancellation, termination or suspension of contracts or subcontracts currently held and debarment from further such contracts or subcontracts as provided by statute. If you need additional information or training regarding this policy, please contact the Office of Civil Rights at (651) 366-3073.

NOTICE TO ALL PRIME AND SUBCONTRACTORS REPORTING REQUIREMENTS

1. In order to monitor compliance with Federal Statutes 23 USC 140 and 23 CFR 230, and Minnesota Statutes §363A.36, all prime contractors and subcontractors are required to complete a Mn/DOT Monthly Employment Compliance Report each month for each project (Form EEO-13, sample copy at EEO Pages 20-21.) Prime contractors are also required to complete a Contractor Employment Data Report (Form EEO-12, sample copy at EEO Pages 18-19) once prior to work commencing on the project, unless one has been completed already within the calendar year.

   The prime contractor of each project collects Monthly Employment Compliance Reports from each subcontractor who performed work during the month, and completes a Monthly Employment Compliance Report on its own work force. **For the month of July only, an EEO-13 is required for each payroll period within the month of July**. The prime contractor submits the EEO-13 forms to the Mn/DOT Project Engineer by the 15th day of the subsequent month.

   Failure to submit the required reports in the allowable time frame will be cause for the imposition of contract sanctions.

   It is the intent of Mn/DOT to implement monitoring measures on each project to ensure that each prime contractor and subcontractor is promoting the full realization of equal employment opportunities. Any project may be scheduled for an in depth on-site contract compliance review. During the scheduled on-site review, the Contractor will be required to provide to Mn/DOT documentation of its "good faith efforts" as shown in EEO Pages 10-13, at 7 a-p of this contract.

2. If a Federally funded project requires On-the-Job-Training (OJT) participation, information is provided in the contract and can be located by referring to the Table of Contents for Division S. (OJT is also listed as a bid line item under Trainees.) When a contract requires OJT participation, the Prime Contractor shall submit a training plan as indicated in the Proposal. The training plan shall include the job classification titles of trainees, planned training activities and the approximate start date of trainees.

3. When a Contractor selects a trainee applicant for OJT, the Contractor completes an On the Job Training Program-Trainee Assignment form (sample copy at EEO Page 23) and submits it to the Contract Compliance Specialist (CCS) assigned to the project for approval. The CCS notifies the Contractor and Project Engineer when the applicant is approved.

4. Hours of work performed by OJT employees shall be documented on a monthly basis on the Certification of On-The-Job Training Hours form, (Mn/DOT Form No. 21860, sample copy at EEO Page 24). The Contractor shall submit the original and one copy to the Project Engineer, and one copy to the CCS assigned to the project.

Do not remove forms from this contract. Please duplicate forms from the copies in this contract, or the Mn/DOT Office of Civil Rights will provide these forms upon request. Please call the Office of Civil Rights, (651) 366-3073.

SPECIFIC FEDERAL EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES
(23 CFR 230, Subpart A, Appendix A, FAPG June 6, 1996)

1. General.

a. Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal opportunity as required by Executive Order 11246 and Executive Order 11375 are set forth in Required contract Provisions (Form PR-1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of title 23, U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.

b. The contractor will work with the State highway agencies and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.

c. The contractor and all his/her subcontractors holding subcontracts not including material suppliers, of $10,000 or more, will comply with the following minimum specific requirement activities of equal employment Opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in volume 6, Chapter 4, Section 1, Subsection 1 of the Federal-Aid Highway program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The contractor will include these requirements in every subcontract of $10,000 or more with such modification of language as is necessary to make them binding on the subcontractor.

2. Equal Employment Opportunity Policy. The contractor will accept as his operating policy the following statement which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote their full realization of equal employment through a positive continuing program:

It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, or national origin. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre apprenticeship, and/or on-the-job training.

3. Equal Employment Opportunity Officer. The contractor will designate and make known to State highway agency contracting officers an equal employment opportunity officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of equal employment opportunity and who must be assigned adequate authority and responsibility to do so.

4. Dissemination of Policy.

a. All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action will be made fully cognizant of, and will implement, the contractor's equal employment opportunity policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

(1). Periodic meetings of supervisory and personnel office staff will be conducted before the start of work and then not less often than once every six months, at which time the contractor's equal employment opportunity policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

(2). All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the contractor's equal employment opportunity obligations within thirty days following their reporting for duty with the contractor.

(3). All personnel who are engaged in direct recruitment for the project will be instructed by the EEO officer or appropriate company official in the contractor's procedures for locating and hiring minority group employees.

b. In order to make the contractor's equal employment policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the contractor will take the following actions:

(1). Notices and posters setting forth the contractor's equal employment opportunity policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

(2). The contractor's equal employment opportunity policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

5. Recruitment.

a. When advertising for employees, the contractor will include in all advertisements for employees the notation "An Equal Opportunity Employer." All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in th area from which the project work force woul normally be derived.

b. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, Stat employment agencies, schools, colleges and minority group organizations. To meet this requirement, the contractor will, through his/her EEO Officer, identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applican may be referred to the contractor for employment consideration.

In the event the contractor has a valid bargaining agreement providing for exclusiv hiring hall referrals, he is expected to observ the provisions of that agreement to the extent that the system permits the contractor's compliance with equal employment opportunity contract provisions. (The U.S. Department of Labor has held that where the implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executiv Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment by posting appropriate notic or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.

6. Personnel Actions. Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, or national origin. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities d not indicate discriminatory treatment of project site personnel.

SPECIFIC FEDERAL EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES *(con=t)*

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his/her obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all his avenues of appeal.

7. Training and Promotion.
a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees and applicants for employment.
b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e. apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Training Special Provision is provided under this contract, this subparagraph will be superseded as indicated in Attachment 2.
c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
d. The Contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

8. Unions. If a contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:
a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group members and women so that they may qualify for higher paying employment.
b. The contractor will use best efforts to incorporate an equal employment opportunity clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, or national origin.
c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the State highway department and shall set forth what efforts have been made to obtain such information.
d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, or national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The U.S. Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the State highway agency.

9. Subcontracting.
a. The contractor will use his best efforts to solicit bids from and to utilize minority group subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of minority-owned construction firms from State highway agency personnel.
b. The contractor will use his best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. Records and Reports:
a. The contractor shall keep such records as necessary to determine compliance with the contractor's equal employment opportunity obligations. The records kept by the contractor will be designed to indicate:
(1) The number of minority and non minority group members and women employed in each work classification on the project.
(2) The progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women (applicable only to contractor's who rely in whole or in part on unions as a source of their work force),
(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees, and
(4) The progress and efforts being made in securing the services of minority group subcontractors with meaningful minority and female representation among their employees.
b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the State highway agency and the Federal Highway Administration.
c. The contractors will submit an annual report to the State highway agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR-1391. If on-the-job training is being required by a "Training Special Provision", the contractor will be required to furnish Form FHWA 1409.

STANDARD FEDERAL AND STATE EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (41 CFR 60-4.3 and Minnesota Statutes 363A.36)

Unless noted, the following apply to both Federal/federally assisted projects and State/state assisted projects. Item 3 applies to Federal/federally assisted projects only

1. As used in these specifications:
   a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
   c. "Employer Identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
   d. "Minority" includes:
      (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
      (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
      (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
      (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 ($100,000 for State projects) the provisions of these specifications and the Notice which contains the applicable goals for minority and women participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4, 5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work on the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7(a) to (p) of these specifications (itemized as 4 [a] to [o], Minnesota Rules

STANDARD FEDERAL AND STATE EEO CONSTRUCTION CONTRACT SPECIFICATIONS *(con't)*

5000.3535). The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minorities and utilization the Contractor should (shall, for State or state assisted projects) reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor shall make substantially uniform progress toward its goals in each craft during the period specified. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Federal goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any office of Federal Contract Compliance programs or from Federal procurement contracting officers. State goals are published periodically in the State Register in notice form, and may be obtained from the Minnesota Department of Human Rights or the Minnesota Department of Transportation Office of Civil Rights. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union, with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications and Executive Order 11246 and its associated rules and regulations for Federal or federally assisted projects, and Minnesota Statutes, Section §363A.36 of the Minnesota Human Rights Act, or the rules adopted under the Act for State or state assisted projects.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained according to training programs approved by the Minnesota Department of Human Rights, the Minnesota Department of Labor and Industry, or the United States Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications must be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following (referred to in Minnesota Rules 5000.3535 as items 4(a) to (o):

(a) Ensure and maintain, or for State or state assisted projects make a good faith effort to maintain, a working environment free of harassment, intimidation, and coercion at all sites and in all facilities at which the Contractor's employees are assigned to work. For

STANDARD FEDERAL AND STATE EEO CONSTRUCTION CONTRACT SPECIFICATIONS *(con't)*

Federal or federally assisted projects, the Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or women individuals working at such sites or in such facilities.

(b) Establish and maintain a current list of minority and women recruitment sources, provide written notification to minority and women recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

(c) Maintain a current file of the names, addresses, and telephone numbers of each minority and woman off-the-street applicant and minority or woman referral from a union, a recruitment source, or community organization and of what action was taken with respect to each individual. If the individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the Contractor may have taken.

(d) Provide immediate written notification to the commissioner of the Minnesota Department of Human Rights for State or state assisted projects, or the director of the Office of Federal Contract Compliance for Federal or federally assisted projects, when the union, or unions with which the Contractor has a collective bargaining agreement, has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

(e) Develop on-the-job training opportunities and/or participate in training programs for the areas which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the State of Minnesota for State or state assisted projects or the Department of Labor, for Federal or federally assisted projects. The Contractor shall provide notice of these programs to the sources compiled under (b).

(f) Disseminate the Contractor's equal employment opportunity policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its equal employment opportunity obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and women employees at least once a year; and by posting the company equal employment opportunity policy on bulletin boards accessible to all employees at each location where construction work is performed.

STANDARD FEDERAL AND STATE EEO CONSTRUCTION CONTRACT SPECIFICATIONS *(con't)*

(g) Review, at least annually, the company's equal employment opportunity policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions; including specific review of these items with onsite supervisory personnel such as superintendents, general foremen, etc., prior to the first day of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

(h) Disseminate the Contractor's equal employment opportunity policy externally by including it in any advertising in the news media, specifically including minority and women news media, and providing written notification to and discussing the Contractor's equal employment opportunity policy with other contractors and subcontractors with whom the Contractor does or anticipates doing business.

(i) Direct its recruitment efforts, both oral and written, to minority, women, and community organizations; to schools with minority and women students; and to minority and women recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

(j) Encourage present minority and women employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and women youth, both on the site and in other areas of a Contractor's work force.

(k) Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3. (This requirement applies only to Federal and federally assisted projects.)

(l) Conduct, at least annually, an inventory and evaluation at least of all minority and women personnel for promotional opportunities; and encourage these employees to seek or to prepare for, through appropriate training, such opportunities. (This is Item 4(k) in Minnesota Rules.)

(m) Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the equal employment opportunity policy and the Contractor's obligations under these specifications are being carried out. (This is item 4(l) in Minnesota Rules.)

STANDARD FEDERAL AND STATE EEO CONSTRUCTION CONTRACT SPECIFICATIONS *(con't)*

(n) Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes. (This is item 4(m) in Minnesota Rules.)

(o) Document and maintain a record of all solicitations or offers for subcontracts from minority and women construction contractors and suppliers, including circulation of solicitations to minority and women contractor associations and other business associations. (This is item 4(n) in Minnesota Rules.)

(p) Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's equal employment opportunity policies and affirmative action obligations. (This is item 4(o) in Minnesota Rules.)

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7(a) to (p) for Federal or federally assisted projects, and 4(a)-(o) for State or state assisted projects). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7(a) to (p) or 4(a) to (o) of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and women work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor however, is required to provide equal employment opportunity and to take affirmative action for all minority groups both male and female, and all women both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order for Federal or federally assisted projects, or Minnesota Rules for State or state assisted projects, if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order or Minnesota Rules part 5000.3520 if a specific minority group is under-utilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, creed, religion, sex, or national origin. Minnesota Statutes §363A.36, part 5000.3535 (Subp. 7) also prohibits discrimination with regard to marital status, status with regard to public assistance, disability, age, or sexual orientation.

STANDARD FEDERAL AND STATE EEO CONSTRUCTION CONTRACT SPECIFICATIONS *(con't)*

11. The Contractor shall not enter into any subcontract with any person or firm debarred from government contracts under the federal Executive Order 11246 or a local human rights ordinance, or whose certificate of compliance has been suspended or revoked pursuant to Minnesota Statutes, Section §363A.36.

12. The Contractor shall carry out such sanctions for violation of these specifications and of the equal opportunity clause, including suspension, termination, and cancellation of existing contracts as may be imposed or ordered pursuant to Minnesota Statutes, Section §363A.36, and its implementing rules for State or state assisted projects, or Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs for Federal or federally assisted projects. Any contractor who fails to carry out such sanctions shall be in violation of these specifications and Minnesota Statutes, Section §363A.36, or Executive Order 11246 as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications (paragraph 4 in Minnesota Rules 5000.3535), so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of these Specifications or Minnesota Statutes, Section §363A.36 and its implementing rules, or Executive Order 11246 and its regulations, the commissioner or the director shall proceed in accordance with Minnesota Rules part 5000.3570 for State or state assisted projects, or 41 CFR 60-4.8 for Federal or federally assisted projects.

14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company equal employment opportunity policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Minnesota Department of Human Rights or the Government, and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (for example, mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing provided in this part shall be construed as a limitation upon the application of other state or federal laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents.

EQUAL OPPORTUNITY CLAUSE

(41 CFR Part 60-1.4 b, 7-1-96 Edition)

The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, o national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated durin employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoffs or termination; rates of pay or other forms of compensation; and, selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the State Highway Agency (SHA) setting forth the provisions of this nondiscrimination clause.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.
3. The Contractor will send to each labor union or representative of workers with which the Contractor has a collective bargainin agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The Contractor will comply with all provisions of Executive Order 11246, Equal Employment Opportunity, dated September 2 1965, and of the rules, regulations (41 CFR Part 60), and relevant orders of the Secretary of Labor.
5. The Contractor will furnish all information and reports required by Executive Order 11246 and by rules, regulations, and orde of the Secretary of Labor, pursuant thereto, and will permit access to its books, records, and accounts by the Federal Highway Administration (FHWA) and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract, or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraph (1) through (7) in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor, unles exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246. The Contractor will take such action with respect to any subcontract or purchase order as the Secretary of Labor, SHA, or the Federal Highway Administration (FHWA) may direct as a means of enforcing such provisions, including sanctions for noncompliance. In the event a contractor becomes a party to litigation by a subcontractor or vendor as a result of such direction, the contractor may request th SHA to enter into such litigation to protect the interest of the State. In addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for th supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Minority and Women Employment Goals

County	Federal Goals		State Goals	
	Minority Goal	Women Goal	Minority Goal	Women Goal
Aitkin	2.2%	6.9%	5%	6%
Anoka	2.9%	6.9%	11%	6%
Becker	0.7%	6.9%	6%	6%
Beltrami	2.0%	6.9%	6%	6%
Benton	0.5%	6.9%	3%	6%
Big Stone	2.2%	6.9%	4%	6%
Blue Earth	2.2%	6.9%	4%	6%
Brown	2.2%	6.9%	4%	6%
Carlton	1.2%	6.9%	5%	6%
Carver	2.9%	6.9%	11%	6%
Cass	2.2%	6.9%	6%	6%
Chippewa	2.2%	6.9%	4%	6%
Chisago	2.9%	6.9%	3%	6%
Clay	0.7%	6.9%	6%	6%
Clearwater	2.0%	6.9%	6%	6%
Cook	1.2%	6.9%	5%	6%
Cottonwood	0.8%	6.9%	4%	6%
Crow Wing	2.2%	6.9%	6%	6%
Dakota	2.9%	6.9%	11%	6%
Dodge	0.9%	6.9%	4%	6%
Douglas	2.2%	6.9%	6%	6%
Faribault	2.2%	6.9%	4%	6%
Fillmore	0.9%	6.9%	4%	6%
Freeborn	0.9%	6.9%	4%	6%
Goodhue	2.2%	6.9%	4%	6%
Grant	2.2%	6.9%	6%	6%
Hennepin	2.9%	6.9%	11%	6%
Houston	0.6%	6.9%	4%	6%
Hubbard	2.0%	6.9%	6%	6%
Isanti	2.2%	6.9%	3%	6%
Itasca	1.2%	6.9%	5%	6%
Jackson	0.8%	6.9%	4%	6%
Kanabec	2.2%	6.9%	3%	6%
Kandiyohi	2.2%	6.9%	3%	6%
Kittson	2.0%	6.9%	6%	6%
Koochiching	1.2%	6.9%	5%	6%
Lac Qui Parle	2.2%	6.9%	4%	6%
Lake	1.2%	6.9%	5%	6%
Lake of the Woods	2.0%	6.9%	6%	6%
Le Sueur	2.2%	6.9%	4%	6%
Lincoln	0.8%	6.9%	4%	6%
Lyon	0.8%	6.9%	4%	6%

County	Federal Goals		State Goals	
	Minority Goal	Women Goal	Minority Goal	Women Goal
Mahnomen	2.0%	6.9%	6%	6%
Marshall	2.0%	6.9%	6%	6%
Martin	2.2%	6.9%	4%	6%
McLeod	2.2%	6.9%	3%	6%
Meeker	2.2%	6.9%	3%	6%
Mille Lacs	2.2%	6.9%	3%	6%
Morrison	2.2%	6.9%	6%	6%
Mower	0.9%	6.9%	4%	6%
Murray	0.8%	6.9%	4%	6%
Nicollet	2.2%	6.9%	4%	6%
Nobles	0.8%	6.9%	4%	6%
Norman	2.0%	6.9%	6%	6%
Olmsted	1.4%	6.9%	4%	6%
Otter Tail	2.2%	6.9%	6%	6%
Pennington	2.0%	6.9%	6%	6%
Pine	2.2%	6.9%	3%	6%
Pipestone	0.8%	6.9%	4%	6%
Polk	1.2%	6.9%	6%	6%
Pope	2.2%	6.9%	6%	6%
Ramsey	2.9%	6.9%	11%	6%
Red Lake	2.0%	6.9%	6%	6%
Redwood	0.8%	6.9%	4%	6%
Renville	2.2%	6.9%	3%	6%
Rice	2.2%	6.9%	4%	6%
Rock	0.8%	6.9%	4%	6%
Roseau	2.0%	6.9%	6%	6%
Scott	2.9%	6.9%	11%	6%
Sherburne	0.5%	6.9%	3%	6%
Sibley	2.2%	6.9%	4%	6%
St. Louis	1.0%	6.9%	5%	6%
Stearns	0.5%	6.9%	3%	6%
Steele	0.9%	6.9%	4%	6%
Stevens	2.2%	6.9%	6%	6%
Swift	2.2%	6.9%	4%	6%
Todd	2.2%	6.9%	6%	6%
Traverse	2.2%	6.9%	6%	6%
Wabasha	0.9%	6.9%	4%	6%
Wadena	2.2%	6.9%	6%	6%
Waseca	2.2%	6.9%	4%	6%
Washington	2.9%	6.9%	11%	6%
Watonwan	2.2%	6.9%	4%	6%
Wilkin	0.7%	6.9%	6%	6%
Winona	0.6%	6.9%	4%	6%
Wright	2.9%	6.9%	3%	6%
Yellow Medicine	2.2%	6.9%	4%	6%

Minnesota Department of Transportation
Office of Civil Rights
Contractor Employment Data

1. Contractor Name and Address:

Phone: _____

	2. Employment Data a) Name: Last Name, First Name, MI	**b) Social Security #**	c) New Hire (Y or N)	d) Ethnicity	e) Gender (M or F)	f) Trade/Foreman, Supervisors, Managers	g) Level (A, J, or T)
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INSTRUCTIONS FOR EEO-12
CONTRACTOR EMPLOYMENT DATA

This form should be submitted at the Pre-Con to the Project Engineer prior to the start of your first Mn/DOT construction project for the calendar year. (Prime and Subs)

1. Contractor Name and Address self-explanatory.

2. Employment Data information will coincide with your employment records.

   2a. Name should be listed First Name, Middle Initial, and Last Name. This will enable Mn/DOT EEO staff to readily identify individuals on all projects.

   2b. Social Security Number self-explanatory.

   2c. New Hire is to be indicated with a "Y" for Yes or an "N" for No. "New Hire" is an employee who has not worked for you in any capacity or on any other project within the current calendar year.

   2d. Ethnicity can be indicated by Black (B), Hispanic (H), American Indian/Alaskan Native (AI), Asian/Pacific Islander (AP), or White (W).

   2e. Gender is to be indicated with an "M" for Males or an "F" for Females.

   2f. Trade/Foreman, Supervisors, Managers self-explanatory. List trade that applies unless the employee fits one of the other three categories.

   2g. Level "A" is for an Apprentice, "J" is for a Journey Worker, and "T" is for a Mn/DOT approved Trainee.

If you have questions about filling out this form, contact the Office of Civil Rights at (651) 366-3073.
(Please make copies as you need them.)

This information can be submitted electronically via the web, through Mn/DOT's Work force Information Tracking Initiative (WITI) Program. To open a free account to gain access to WITI or to find out more about this possibility please contact Mn/DOT's Office of Civil Rights at (651) 366-3321.

Minnesota Department of Transportation

Office of Civil Rights
Monthly Employment Compliance Report
EEO-13

1. SP ☐ **SAP** ☐ (Check one) **SP#**	**3. Contractor Name:** **Federal Tax ID:**	**4. Prime** ☐ **Subcontractor** ☐ (check one)
County or City	Street Address:	5. Dollar Amount of Contract:
2. Reporting Period _____ to _____	City, State Zip	6. Percent of Completion:

. Employment Data a) Name: Last, First Middle Initial	b) Social Security #	c) New Hire (Y or N)	d) Ethnicity	e) Gender M or F)	Trade/Foreman, Supervisors, Managers	g) Level (A, J or T)	h) Hours Worked This Period
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. Contract Goals	9. **Prepared by:** (Signature)	10. **Reviewed by:** (Signature)
MINNESOTA GOALS **%OBTAINED**		
_____ % Minority _____ %	Print Name:	Print Name:
_____ % Women _____ %	Title:	Title:
	Date:	Date:
	Phone: Fax:	Phone: Fax:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever being an officer, agent, or employee of the United States, of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed there under.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts -49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft,

forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department of agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participation in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

APPENDIX A (Long Version)
REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

The required Contract Provisions for Federal-aid construction contracts, Form FHWA-1273 (Rev. 4-93) is restated here for emphasis:

Section IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

Section IV.2, Classification

2. Classification

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers as defined in Section IV.4(c), when such a classification prevails in the area in which the work is performed.

For implementation reference Section IV.2(c), (d) and (e).

The Required Contract Provisions for Federal-aid construction contracts, Form FHWA-1273 (Rev. 4-93) is amended as set forth:

Section V. STATEMENTS AND PAYROLLS

In part c of Section V.2, Payrolls and Payroll Records, the term "furnish" in this context will be accomplished by the subcontractors, on the project, sending their certified payroll reports to the government's prime contractor. The prime contractor will then be required to send copies of both the subcontractor's and their own certification forms, Mn/DOT 21658A form, to the project engineer. The prime contractor will maintain at a readily accessible location acceptable to Mn/DOT all the payrolls (both theirs and the subcontractors) during the course of the work and for a period of three years from the date of the completion of the contract.
Mn/DOT, as the contracting agency, will stand, upon demand, require the prime contractor to send to the project engineer copies of any or all contractor's certified payrolls from any given project.

Minnesota Department of Transportation Schedule of Materials Control – Introduction Page

(Federal Aid, State Funds, County/Municipal Federal Aid Projects and State Aid Projects)

This schedule outlines the minimum sampling and testing required for most materials used in highway construction. Some items that are rarely used or materials of recent development are often covered by special provisions and may not be shown on the schedule. For more information regarding contract requirements for testing, please reference the "Standard Specifications for Construction", Specification 1603 Materials: Specifications, Samples, Tests, and Acceptance. When sample sizes required for testing exceed 35 pounds, please submit multiple containers of the material with no individual container weighing more than 35 pounds.

Small quantities of materials may be accepted without sampling and testing. A small quantity is defined as any total quantity, for the whole project, of one material, which is smaller than the minimum quantity required for testing unless modified by the individual material items. These materials shall be from known, reliable sources, perform satisfactorily and meet the requirements for purpose intended. The inspection report (Form 02415) should include a statement to this effect and show the source. Form 2403 may be used to report small quantities of diverse materials from different sources. Form 02415 and Form 2403 (or approved revisions) are referenced in the Schedule of Materials Control for project record documentation and are required to be maintained in the project file.

Where items of small quantity are used in a critical location or significantly influence the safety, performance, strength or durability of major construction items, prior approval for their use without testing must be obtained.

Previously approved materials transferred from another project should be reported on Form 02415. The report should include: type of material, quantities involved, source, and supplier of materials. Whenever possible, include the project number for which the material was originally approved.

If Forms 02415 and 2403 are referenced by form number within the Materials Control Schedule for materials or products received from pre-approved sources, where the field responsibility for acceptance is visual inspection and all information required to complete these forms is contained in other documents in the project file, the use of these forms becomes optional. If these forms are completed and sent to the Project Engineer by off-site inspection personnel from the district or the Office of Materials, they must be retained in the project file.

A telephone Index is included with the Schedule giving the numbers of contact persons if further information is required regarding the various materials. A form index is also included.

A website (www.dot.state.mn.us/materials.html) has been established for the Office of Materials. The contributing units to the Materials Control Schedule from the Pavement Engineering Section are the Bituminous Engineering Unit, the Concrete Engineering Unit, and the Grading & Base Unit. The Department maintains the Approved/Qualified Products List and the Certified Products and Services List, as well as, the Materials Control Schedule.

Products manufactured offsite may be pre-approved; however, final acceptance will be made at the point of incorporation, based upon review of documentation and inspection for shipping or other damage.

Contact the Mn/DOT District Independent Assurance Inspector when project starts to provide the proper servicing of your project.

Index

Certifications List

Material	Section	Sub Section	Page	Certification Needed
Bituminous mixture	II. Bituminous	Many	12-17	All Bituminous from certified Supplier www.dot.state.mn.us/materialsbituminous.html
Shingles	II. Bituminous	2	13	Contractor shall provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.
Bituminous Material	II. Bituminous	9	16	Only Bituminous Materials from Certified Sources are allowed for use. The most current list of Certified Sources can at http://www.dot.state.mn.us/products
Emulsions	III. Seal Coat		19	Use Emulsion for seal coat from a certified source.
Emulsions	III. Seal Coat		19	Use Emulsion for Fog Seal from a certified source.
Emulsions	III. Micro surfacing		20	Use Asphalt Emulsion from a certified source.
Emulsions	III. Micro surfacing		20	Use Micro surfacing Emulsion from a certified source.
Emulsions	III. Micro surfacing		20	Use Fog Seal Emulsion from a certified source.
Concrete Ready Mix	IV. Concrete	Many	21-34	Contact Report from Ready-Mix Plant. All concrete from certified plant including a computerized certificate of compliance with each load.
Ground Granulated Blast Furnace Slag Fly Ash Admixtures Cement	IV. Concrete		22	Concrete Plant Batching Materials: All materials must come from certified or approved sources. All certified sources must state so on the Bill of Lading Delivery invoice including Mn/DOT standardized certification statement for cement, flyash, and slag. The most current list of certified/approved sources can be found at www.dot.state.mn.us/products.
Air Content	IV. Concrete ready-mix for concrete paving		26	Certificate of Compliance.
Plastic for Curing	IV. Concrete		29	A Certificate of Compliance shall be submitted to the Project Engineer from the Manufacturer certifying that the plastic complies with AASHTO M171.

Certifications List (cont.)

Material	Section	Sub Section	Page	Certification Needed
Aggregate for Low Slump Overlays	IV. Concrete		32	Aggregate pit numbers and 1 passing gradation result per fraction each time aggregate is delivered to the site
Profiler	IV. Concrete		32	Contractor provides Mn/DOT certified Inertial Profiler Results for bumps/dips and/or Areas of Localized Roughness for the entire project.
Aggregate for Concrete Pavement Repair	IV. Concrete		33	Aggregate pit numbers and 1 passing gradation result per fraction each time aggregate is delivered to the site
Aggregate for Dowel Bar Retrofits	IV. Concrete		34	Aggregate pit numbers and 1 passing gradation result per fraction each time aggregate is delivered to the site
Plant Stock & Landscape Materials	V: Landscaping etc.	2	35	Several certifications
Silt Fence	V: Landscaping etc.	5	36	Certificate of Compliance with MARV values
Flotation Silt Curtain	V: Landscaping etc.	6	36	Manufacturers' certification
Mulch Type 3	V: Landscaping etc.	14A	36	Certified Vendor by Minnesota Crop Improvement Association must be tagged grain straw only on label.
Mulch Type 6 Wood Chips	V: Landscaping etc.	14B	37	Emerald Ash Borer Compliance Agreement with the MDA
Seeds	V: Landscaping etc.	15A	37	Official guaranteed seed analysis labeled on containers in addition to seed tag.
Seeds - Native	V: Landscaping etc.	15B	37	Certified Vendor by Minnesota Crop Improvement Association must be tagged.
Sod	V: Landscaping etc.	16	37	A certificate of Compliance for type of sod listing grass varieties.
Compost	V: Landscaping etc.	17A	37	A/QPL with certified test reports.
Waterproofing material membrane waterproof system	VI: Chemical Items		38	Certificate and test results
Waterborne latex traffic marking paint	VI: Chemical Items		39	Certificate of Compliance
Epoxy traffic paint	VI: Chemical Items		39	Certificate of Compliance
Traffic marking paint	VI: Chemical Items		39	Certificate of Compliance
Non-traffic marking paint	VI: Chemical Items		39	Certificate of Compliance
Bridge structural steel paint	VI: Chemical Items		40	Certificate of Compliance
Exterior masonry paint	VI: Chemical Items		40	Certificate of Compliance
Noise wall stain	VI: Chemical Items		40	Certificate of Compliance
Drop-on glass beads	VI: Chemical Items		40	Certificate of Compliance
Pavement marking tape	VI: Chemical Items		40	Certificate of Compliance
Steel sign posts	VII: Metallic	2	42	Certification of domestic source if applicable under 1601.
Posts for traffic or fence	VII: Metallic	3A	42	Certification of domestic source if applicable under 1601. For fence: fence certification form.
Fence components	VII: Metallic	3B	42	Fence certification form.
Fence gates	VII: Metallic	3C	42	Fence certification form.
Fence barbed wire fabric	VII: Metallic	3D	42	Fence certification form.
Fence woven wire fabric	VII: Metallic	3E	42	Fence certification form.
Fence chain link wire fabric	VII: Metallic	3F	43	Fence certification form.
Reinforcing steel uncoated bars	VII: Metallic	5A	43	Certificate of Compliance & certified mill analysis
Reinforcing steel epoxy bars	VII: Metallic	5B	44	Inspected tag or Certificate of Compliance & certified mill analysis

Certifications List (cont.)

Material	Section	Sub Section	Page	Certification Needed
Steel Fabric	VII: Metallic	5E	44	Certificate of Compliance
Dowel Bars	VII: Metallic	5F	44	Certificate of Compliance
Pre or post tensioning strand	VII: Metallic	5G	45	Mill analysis
Anchor rods & bolts	VII: Metallic	7	45	Yearly Mn/DOT passing test report
Timber & lumber	VIII: Miscellaneous	1	47	Certified on invoice
Elastomeric bearing pad	VIII: Miscellaneous	4	47	Certificate of Compliance
Corrugated metal pipe	IX: Geosynthetics & Pipe	1A	47	Certified on invoice
Corrugated metal structural plate	IX: Geosynthetics & Pipe	1B	47	Certified on invoice
Corrugated metal aluminum plate	IX: Geosynthetics & Pipe	1C	48	Fabricator's Certificate and guarantee
Concrete pipe & manholes reinforced	IX: Geosynthetics & Pipe	3A	48	Certified stamp and certification document
Concrete pipe non reinforced	IX: Geosynthetics & Pipe	3B	48	Certified stamp and certification document
Prestressed box culverts	IX: Geosynthetics & Pipe	4A	49	Stamped & field inspection report
Precast beams & posts, etc	IX: Geosynthetics & Pipe	4B	49	Stamped & field inspection report
Manholes & catch basins	IX: Geosynthetics & Pipe	5	50	Certification document or stamped
Thermal plastic pipe ABS & PVC	IX: Geosynthetics & Pipe	7	50	Certificate of Compliance
Corrugated PE Pipe: Single wall – edge drains	IX: Geosynthetics & Pipe	8	50	Certificate of Compliance
Corrugated PE Pipe: dual wall – 12"-48"	IX: Geosynthetics & Pipe	13	51	Certificate of Compliance
Geotextile fabric	IX: Geosynthetics & Pipe	14	52	Manufacturers' Certification of compliance
Brick sewer concrete	X: Brick, Stone, Masonry	1B	53	Air content statement
Concrete masonry units	X: Brick, Stone, Masonry	2A	53	Air content statement
Light standards	XI: Electrical & Signal	1	54	Certificate of Compliance
Cable & Conductors	XI: Electrical & Signal	7B	55	Usually inspected at the distributor. Documentation showing project number, reel number(s), & Mn/DOT test number(s) will be included with each project shipment. If not received from Contractor, submit sample for testing along with manufacturers' material certification.
Electrical systems	XI: Electrical & Signal	10	56	Electrical Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.
Traffic signal systems	XI: Electrical & Signal	11	56	Traffic Signal Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report.

Telephone Index for Schedule of Materials Control

Section	Page	Section Name	Contact	Phone
Part I	Page 7	Grading & Base	Tim Andersen Cary Efta Rebecca Embacher	(651) 366-5455 (651) 366-5421 (651) 366-5525
Website: www.dot.state.mn.us/materials/gradingandbase.html				
Part II Part II B 4	Page 12 Page 14	Bituminous - Spec. 2360 Asphalt Binder	John Garrity Jim McGraw Jason Szondy	(651) 366-5577 (651) 366-5548 (651) 366-5549
Website: www.dot.state.mn.us/materials/bituminous.html				
Part III	Page 18	Seal Coating – Spec 2356	Erland Lukanen Tom Wood	(651) 366-5460 (651) 366-5573
Part IV	Page 21	Concrete – Aggregates and Mix Design Concrete – Certified Ready Mix Concrete Paving Concrete – Bridges	Wendy Garr Wendy Garr Maria Masten Ron Mulvaney	(651) 366-5423 (651) 366-5423 (651) 366-5572 (651) 366-5575
Website: www.dot.state.mn.us/materials/concrete.html				
Part V	Page 35	Landscaping and Erosion Control Items Erosion Control Landscaping Wood Chips	 Lori Belz Scott Bradley Paul Walvatne	 (651) 366-3607 (651) 366-4612 (651) 366-3632
Part VI	Page 38	Chemical Items	Jim McGraw Dave Iverson	(651) 366-5548 (651) 366-5550
Part VII	Page 41	Metallic Materials and Metal Products Sampling Test Results Bridge Structural Metals	 Terry Beaudry Laboratory Todd Niemann Barry Glassman	 (651) 366-5456 (651) 366-5560 (651) 366-4567 (651) 366-4568
Part VIII	Page 47	Miscellaneous Materials Sections 1thru 3 Section 4 Test Results	 Terry Beaudry Todd Nieman Barry Glassman Laboratory	 (651) 366-5456 (651) 366-4567 (651) 366-4568 (651) 366-5560
Part IX	Page 47	Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete Sections 1 thru 5 and 8 thru 11, & 13 Sections 6, 7 Section 12 Section 14 Test Results	 Steve Grover Terry Beaudry Rich Lamb Randy Tilseth Laboratory	 (651) 366-5540 (651) 366-5456 (651) 366-5595 (651) 366-5451 (651) 366-5560
Part X	Page 53	Brick, Stone and Masonry Units/Modular Retaining Wall Blocks Sections 1, 2A & 4 Section 2B Section 3 Test Results	 Terry Beaudry Blake Nelson Steve Grover Laboratory	 (651) 366-5456 (651) 366-5599 (651) 366-5540 (651) 366-5561
Part XI	Page 54	Electrical & Signal Sections 1, 8-11 Section 2 Section 3 Sections 4-7 Test Results	 Susan Zarling Steve Grover Wendy Garr Terry Beaudry Laboratory	 (651) 234-7052 (651) 366-5540 (651) 366-5423 (651) 366-5456 (651) 366-5560

Form Index

Grading and Base	
Form No.	**Form Name**
02115-03	Grading & Base Report
02154-02	Random Sampling Gradations
2170-02	Penetration Index Method - Aggregate Base & Edge Drains
02402-03	Work Sheet for Sieve Analysis of Granular Material
02463	Percent Crushing Report
24346-02	Certificate of Aggregates & Granular Materials
24587-01	Calculation for Moisture - Density Relationships in Subgrade Soils and Aggregate Base and Shoulders
Concrete	
Form No.	**Form Name**
2152	Concrete Batching Report
2162	Concrete Test Beam Data
2409	ID Card Concrete Test Cylinder
2448	Weekly Concrete Report
2449	Weekly Concrete Aggregate Report (QC/QA)
21412	Weekly Report of "Low Slump Concrete"
21763	Concrete Aggregate Worksheet
21764	Concrete Aggregate Worksheet JMF
24143	Weekly Certified Ready-Mix Plant Report (Verification)
24300	ID Card Cement Samples
24308	ID Card Fly Ash Samples
24327	Field Core Report
	Microwave Oven Worksheet
	Incentive/Disincentive Smoothness Worksheet
Bituminous	
Form No.	**Form Name**
2413	Asphalt Sample Identification Card
Miscellaneous	
Form No.	**Form Name**
2410	Sample ID Card
02415	Inspection Report on..... (May be used for documentation or use another method to capture required documentation)
2403	Inspection Report for Small Quantities (May be used for documentation or use another method to capture required documentation)
	Certification Form for Type of Fence used, see on right side of page, www.dot.state.mn.us/materials/lab.html

I. Grading and Base Construction Items (www.dot.state.mn.us/materials/gradingandbase.html)

Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(a) 2118 (b) 2211 (c) 2221	**1. Gradation** (a) Aggregate Surfacing (b) Aggregate Base (c) Aggregate Shoulders	3138 & Special Provisions	02115-03, 02154-02, & 24346-02	1/1,000 ton	1/1,000 t	Random Sampling Individual Tests 275 yd^3 to < 2,200 yd^3 (CV) 1 test /550 yd^3 Average Lots 2,200 yd^3 to 5,500 yd^3 (CV) 4 tests/Lot (See Note 2 & 8)	Random Sampling Individual Tests 230 m^3 to < 1,840 m^3 (CV) 1test /460 m^3 Average Lots 1,840 m^3 to 4,600 m^3 (CV) 4 tests/Lot (See Note 2 & 8)	50 lb	25 kg	1 per source 10-15 kg or 30 lb (Salvage Bit. See Note 3)
(d) 2105	(d) Stabilizing Aggregate	3149 & Special Provisions								
(e) 2211	(e) Open Graded Aggregate Base (OGAB)	Special Provisions	02115-03, 24346-02, & 02402-03	4 per source before placing on project		1/1,000 ton or 1/550 yd^3 (CV) (See Note 2)	1/1,000 t or 1/460 m^3 (CV) (See Note 2)			1 per source 10-15 kg or 30 lb
(f) 2105	(f) Granular Borrow Select Granular Borrow	3149 & Special Provisions		Less than 100,000 yd^3 2/source More than 100,000 yd^3 4/source	Less than 100,000 m^3 2/source More than 100,000 m^3 4/source	1/20,000 yd^3 (CV) (See Note 2)	1/15,000 m^3(CV) (See Note 2)			1 per source 10-15 kg or 30 lb (Salvage Bit. See Note 3)
(g) 2331	(g) Full Depth Reclamation (FDR)	Special Provisions	02115-03 & 02402-03	1/6,000 yd^2	1/5,000 m^2	1/12,000 yd^2	1/10,000 m^2	None		None
(h) 2511	(h) Granular Filter	3601 & Special Provisions	02115-03, 24346-02, & 02402-03	1 per source before placing on project		1 per source (See Note 2)		300 lb	136 kg	1 per source 68 kg or 150 lb

I. Grading and Base Construction Items (cont.)

Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(i) 2451 (j) 2451 (k) 2451 (l) 2451	(Continued) **1. Gradation** (i) Granular Backfill (j) Aggregate Backfill (k) Granular Bedding (l) Aggregate Bedding	3149 & Special Provisions	02115-03, 24346-02, & 02402-03	2 per source before placing on project		1 per source (See Note 2)		50 lb	25 kg	1 per source 10-15 kg or 30 lb (Salvage Bit. See Note 3)
(m) 2451 (n) 2502 (o) 2206	(m) Coarse Filter Aggregate (n) Fine Filter Aggregate (o) Sand Cover	3149 & Special Provisions								1 per source 10-15 kg or 30 lb
(a) 2211 (b) 2221	**2. Moisture – Density Test** (*Required for Specified Density*) (Proctor) (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	24587-01	Contractor is encouraged to perform additional tests for process control.		1/22,000 yd^3 (per source)	1/18,000 m^3 (per source)	50 lb	25 kg	One sample minimum 12 kg or 25 lb
(c) 2105	(c) Embankment Soil (Excavation & Borrow)	2105				1 per major soil				Two samples minimum 12 kg or 25 lb
(a) 2211 (b) 2221	**3. Relative Density Test** (*Required for Specified Density*) (a) Aggregate Base (b) Aggregate Shoulder	2211 & Special Provisions	02115-03 & 02140-03	Contractor is encouraged to perform additional tests for process control.		1/1,000 yd^3 (CV)	1/800 m^3 (CV)	None		None
(c) 2105	(c) Embankment Soil (Excavation & Borrow)	2105 & Special Provisions				1/4,000 yd^3 (CV)	1/3,000 m^3 (CV)			

I. Grading and Base Construction Items (cont.)

Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(a) 2211 (b) 2221	**4. Penetration Index Method (DCP)** (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	02115-03 & 02170-02	Contractor is encouraged to perform additional tests for process control.		2 DCP tests/1,000 yd^3 (CV)	2 DCP tests/800 m^3 (CV)	None		None
(c) 2331	(c) Full Depth Reclamation (FDR)	2331 & Special Provisions				2 DCP tests/6,000 yd^2	2 DCP tests/5,000 m^2			
(d) 2502	(d) Fine Filter Aggregate (Edge Drains)					See Special Provisions				
(a) 2211 (b) 2221	**5. Modified Penetration Index Method (DCP)** (Special Provisions) (a) Aggregate Base (b) Aggregate Shoulder	2211 2221	02115-03 & Special Provisions	Contractor is encouraged to perform additional tests for process control.		2 DCP tests/1,000 yd^3 (CV)	2 DCP tests/800 m^3 (CV)			
(c) 2105	(c) Granular Borrow Select Granular Borrow	2105, 3149, & Special Provisions				2 DCP tests/4,000 yd^3 (CV)	2 DCP tests/3,000 m^3 (CV)			
(a) 2211 (b) 2221	**6. Relative Moisture** *(Required for Specified Density)* (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	02115-03 & 21850-02	Contractor is encouraged to perform additional tests for process control.		1/1,000 yd^3 or 10 tests whichever is less	1/800m^3 or 10 tests whichever is less			
(c) 2105	(c) Embankment Soil (Excavation & Borrow)	2105 & Special Provisions				1/10,000 yd^3 (CV)	1/7,500 m^3 (CV)			

I. Grading and Base Construction Items (cont.)

Pay Item Number	Material	Spec. No.	Form No. (See Note 5)	Minimum Required Contractor Quality Control Testing (QC Production Testing Rate)		Minimum Required Agency Acceptance Testing (Field Testing Rate)		Minimum Field Sample Size (See Note 6)		Required Laboratory Sample Rate & Size (See Note 1)
				English	Metric	English	Metric	English	Metric	
(a) 2211 (b) 2221	**7. Moisture Content**, (Dry Weight) (Required for Quality Compaction, Penetration Index Method, & Modified Penetration Method) (a) Aggregate Base (b) Aggregate Shoulder	2211, 2221, & Special Provisions	02115-03 & 21850-02	Contractor is encouraged to perform additional tests for process control.		1/1,000 yd^3 or 10 tests whichever is less	1/800m^3 or 10 tests whichever is less	None		None
(a) 2105 2118 2211 2221	**8. Percent Crushing** (a) Belt Samples	3138, 3149, & Special Provisions	02463 & 24346-02	One Per Day (See Note 7)		None		None		
(b) 2105 2118 2211 2221	(b) Particle Count					One Per Source (See Note 7)				
2105 2118 2206 2211 2221 2451 2502	**9. Aggregate** (Quality Tests)	3138, 3149, & Special Provisions	None	1/source (See Note 9)		None				1 per source 10-15 kg or 30 lb (See Note 4)

I. Grading and Base Construction Items (cont.)

Note 1: Laboratory samples are not required for 1,000 metric tons [1,000 tons] or less. Conversion Factors are listed in the Mn/DOT Grading & Base Manual under "Conversion Factors in Grading and Base Work".

The first field sample with a laboratory companion must be taken within the first 3,000 metric tons [3,000 tons]. The field sample results must be included with the laboratory sample.

Companion samples are not required when project acceptance testing is done in a laboratory facility that maintain their own independent AMRL accreditation for the test procedure being used. Not all laboratories will do project acceptance testing.

Field-lab tolerances are in the Mn/DOT Grading & Base Manual at: http://www.dot.state.mn.us/materials/gbmanual.html

Sieve Analysis Procedure (Gradation) Sampling for Moisture-Density Test (Proctor)

Note 2: Samples are not required for 500 ton or less. Report small quantities on form 02415 or 2403.

Note 3: Submit a laboratory companion to the first Acceptance Gradation sample for a bituminous extraction.

Note 4: Carbonate aggregate materials require 20 - 25 kg (50 lbs) for the lab.

Note 5: Forms are available on the Grading & Base website at:
http://www.dot.state.mn.us/materials/gradingandbase.html

Note 6: Minimum Test Size = 1/2 Field Sample Size.

Note 7: Percent crushing test will not be required when the material is crushed from a source meeting the requirements of class A or class B in 3137.2B or 3139.2A2.

Note 8: Volume to mass conversion: $1yd^3$ (CV) = 1.8 tons, $1m^3$ (CV) = 2.2 metric tons

In Random Sampling, the Individual Tests are used when the total quantity of each aggregate class is less than 4,000 tons or 2,200 cu. yds. (CV) and the Average Lots are used when the total quantity of each aggregate class is at least 4,000 tons or 2,200 cu. yds, (CV) for the project.

Note 9: The Contractor may use the Ignition Oven (Mn/DOT Lab. Manual Method 1853) to determine bitumen content.

II. Bituminous Construction Items for Specification 2360 (Note #1)
(All bituminous mixtures are from Certified Plants) (www.dot.state.mn.us/materialsbituminous.html)

DEFINITIONS

SAMPLE TYPE	DESCRIPTION	SAMPLE LOCATION DETERMINED BY	SAMPLE TAKEN BY	SAMPLE TESTED BY
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Agency. This test is performed on a companion sample to the Contractor's QC sample.	Contractor	Contractor	Agency
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Agency	Agency	Agency
Verification Companion	A companion sample to the Agency's Verification sample provided to the Contractor. The Contractor is required to test this sample. The results shall be used as part of the QC program.	Agency	Agency	Contractor
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

A. Pre-Production Sampling and Testing for Specification 2360

SAMPLE SIZE: 35 kg (75 lb.) - plus #4 aggregate sample for quality testing and Percent Crushing
15 kg (35 lb.) - minus #4 aggregate for quality testing
35 kg (75 lb.) – RAP for Quality Testing
5 kg (10 lb.) – RAS (Shingles) for Gradation and Quality Testing
33 kg (70 lb.) - bituminous mixture plus 2 Gyratory specimens for volumetric testing
35 kg (75 lb.) - bituminous mixture for TSR testing (option A)
8 kg (18 lb.) - bituminous mixture for TSR testing plus 6 Gyratory specimens (option B)
1 kg (2 lb.) - for mineral filler.

1. Bituminous Mix Design (QC/QA)

QC Testing
REMARKS: Mix Design for Spec. 2360 is Contractor's responsibility with review by Mn/DOT.

QA Testing
For Gyratory Design, Option 1- Laboratory Mix Design: In addition to reviewing the Trial Mix data (JMF), test Contractor's two Gyratory specimens and uncompacted mixture (specimens and mixture submitted at optimum asphalt content). Also, evaluate TSR per 2360.3 B3. For option 2, Modified Mix Design, review Trial Mix data only.

For Gyratory Design Option 2, Modified Mix Design, review Trial Mix data only.

II. Bituminous Construction for Specification 2360 (Part A, cont.)

2. Aggregate Quality Testing (QA Only)

QA Testing
Contractor shall provide 24 hour notice of intent to sample aggregates for quality testing. Agency has the option to monitor sampling.

Contractor submits to the Bituminous Engineer or the District Materials Engineer one (1) sample of each non-asphaltic aggregate type or class per source per year. Contractor shall also submit the asphaltic aggregate material when the mixture contains RAP or RAS. Quality testing will be performed as directed by the Bituminous Engineer or the District Materials Engineer. When aggregate qualities approach specification limits or when material variation is observed, take additional field samples.
Contractor shall provide documentation that of all RAS /TOSS (Tear Off Shingle) material is from a MPCA certified supplier.

3. Mineral Filler (QA Only)

QA Testing
One (1) per shipment of 45 metric tons (50 tons) or less, unless previously inspected.

4. Additives (QA Only)

QA Testing
1 L (1 qt.) of blended asphalt binder and additive. Sample first shipment of each type of material, then submit one sample per 1,000 m^3 (250,000 gal.) (approximately 1,000 ton).

B. BITUMINOUS PRODUCTION for Specification 2360 (Note #12)

SAMPLE SIZE: 15 kg (35 lb.) for Aggregate for Gradation (QC/QA)
35 kg (75 lb.) for each plus #4 Aggregate Type for Quality Testing
15 kg (35 lb.) for each minus #4 Aggregate Type for Quality Testing
35 kg (75 lb.) for each RAP material for Quality Testing
5 kg (10 lb.) RAS (Shingles) for Processed Gradation and Quality Testing
30 kg (65 lb.) for Mixture Properties (QC/QA) 3 full 6" by 12" cylinder molds for QA (Gyratory mixes)
40 kg (90 lb.) for TSR (QC/QA) 4 full 6" by 12" cylinder molds for QA
40 kg (90 lb.) for Aggregate Specific Gravity (QC/QA)
1 L (1 qt) for Asphalt Binder (QA)
2 L (½ gal) for Asphalt Emulsion (QA)

1. Plant Mix Aggregate Gradation Testing (QC/QA, Verification*)
QC Testing
1 per 450 metric tons (500 tons) at start of production, for the first 1,800 metric tons (2,000 tons) of mixture produced, then
1 per 900 metric tons (1,000 tons) or portion thereof per mix blend as required by 2360.4E6
Companion samples taken for agency.
REMARKS: See Note #2, Note #3, & Note #5.
QA Testing
Companions to QC samples set aside for 10 calendar days & tested as needed. The Agency representative observes QC testing as needed.

2. Aggregate Percent Crushing (QC/QA, Verification*)
QC Testing
Testing rates as required by 2360.4E7 CAA, 2360.4E8 FAA. Two tests per day (CAA, FAA) for first two days. If CAA results exceed the specification minimum by 8% of the requirement; sample daily, test minimum one per week. If FAA results exceed the specification minimum by 5% of the requirement; sample daily, test minimum one per week.
REMARKS: See Note #2, Note #3, & Note #4
QA Testing
Companions to QC samples set-aside for 10 calendar days and tested as needed. The Agency representative observes QC testing as needed.

3. Aggregate Quality Testing (QA Only)
QA Testing
When aggregate qualities approach specification limits or when material variation is observed, take additional field samples as requested by Project Engineer.
When material variation is observed in RAP or RAS take additional field samples as requested by Project Engineer.

II. Bituminous Construction for Specification 2360 (cont.)

B. Bituminous Production for Specification 2360 (cont.)

4. Asphalt Binder Content, % (QC/QA, Verification)
QC Testing
1 per 450 metric tons (500 tons) per mix blend for first 1,800 metric tons (2,000 tons) of mixture produced. Then 1 per 900 metric tons (1000 tons) or portion thereof per mix blend as required by 2360.4E6

REMARKS: See Note #5.

(a) Meter Method (Virgin only)..... Mn/DOT Bituminous Manual
(b) Incinerator Oven..... Mn/DOT Lab Manual Method 1853
(c) Chemical Extraction..... Mn/DOT Lab Manual Method 1851 or 1852
(d) Spot Check (Virgin only)..... Mn/DOT Bituminous Manual 5-693.848

REMARKS: The verification companion sample must use Method (b) or (c) only. When more than one Mn/DOT approved test procedure is available, the Contractor shall select one method at the beginning of the project (when material is submitted for Trial Mix Review) and use that method for the entire project. The Contractor and Engineer may agree to change test procedures during the construction of the Project.
REMARKS: See Note #2 & Note #3. If a member of a monitoring team observes the Contractor test, note and sign under remarks.
REMARKS: For mixtures containing Shingles see Note #7.

QA Testing Companions to QC samples set aside for 10 calendar & tested as needed. The Agency representative observes QC testing as needed.

5. Mixture Properties (QC/QA, Verification*)
Maximum Specific Gravity, Gyratory Bulk Specific Gravity - 2 Specimen Average, air voids, Adjusted Asphalt Film Thickness (AFT), asphalt binder content, and gradation.
REMARKS: See Note #8 Asphalt Film Thickness (AFT)

QC Testing
1 per 450 metric tons (500 tons) per mix blend, at the start of production, for first 1,800 metric tons (2,000 tons) of mixture produced. Determine planned tonnage for each mixture to be produced during the production day. Divide the planned production by 1,000; round up to the next higher whole number. This number will be the number of production tests required for that mixture.
Verification Companion testing from Agency split sample is required to be performed and shall be used as a QC sample once per day.

REMARKS: See Note #2, Note #3, & Note #11.

QA Testing
Companion samples to QC samples set aside for 10 calendar days and tested as needed. The agency representative shall review QC operations on a daily basis. Review shall include but is not limited to monitoring QC summary sheets and comparing allowable tolerances for verification sample/verification companion sample test results. The Agency representative shall observe either 1 QC test per week (during production) or 1 QC test per 10,000 tons, whichever results in more frequent observations.

*Verification Testing
Verification Companion testing from Agency split sample is required to be performed and shall be used as a QC sample once per day. The verification companion shall also be tested for CAA and FAA at a rate of 1 test per week, if the CAA and FAA exceed the requirements by 8% and 5% respectively, otherwise test daily.

An Agency representative will take 1 verification sample per mixture blend per day for Mn/DOT laboratory testing. A verification companion sample will be given to contractor for QC testing.

II. Bituminous Construction for Specification 2360

B. Bituminous Production for Specification 2360 (cont.)

6. Core Density and Thickness

QC Testing

Production/lot testing rate requirements.

Daily Production		Lots
Metric Ton	English (ton)	
270* – 545	(300* – 600)	1
546 – 910	(601 – 1000)	2
911 – 1455	(1001 – 1600)	3
1456 – 3275	(1601 – 3600)	4
3276 – 4545	(3601 – 5000)	5
4546 +	(5001 +)	6

*When mix production is less that 270 metric tons (300 tons), establish 1st lot when accumulative tonnage exceeds 270 metric tons (300 tons).

Core locations determined and marked by Agency. Companion cores are required for each Contractor density core. The Contractor shall schedule the approximate time of testing during normal project work hours so that the Agency may observe and record the saturated surface dry and immersed weight of the cores.

REMARKS: Sawing of cores into separate lifts is required. Contractor is required to have a saw capable of separating the core lifts without damaging the material. See Note #10 for Longitudinal joint density cores.

QA Testing

Core locations determined and marked by Agency. Agency representative observes all Contractor coring, measuring, sawing and testing, and takes possession of Agency cores after sawing. Agency cores shall be transported and tested at the Laboratory (Agency field or District/Division) as soon as possible to prevent damage due to improper handling or exposure to heat. A completed coring log shall be submitted to the Laboratory (Agency field or District/Division).

Remarks: See Note #6, Note #10, and Note #11

7. Aggregate Specific Gravity (QC/QA)

QC Sampling: Sampled and tested by Contractor, if requested by District Materials Engineer.

QA Testing: Companion sample to QC sample shall be submitted to the District Materials Lab and tested as needed.

8. Tensile Strength Ratio (T.S.R.) (QC/QA)

QC Sampling

Sample as directed by the District Materials Engineer. If the District Materials Engineer requires the samples to be tested, both the Contractor and the Department will be required to test these samples within 72 hours after they are sampled.

QA Testing

When QC sampling is required, the companion sample to QC sample shall be submitted to the District/Division Materials Lab and tested as needed.

II. Bituminous Construction Items for Specification 2360

B. Bituminous Production for Specification 2360 (cont.)

9. BITUMINOUS MATERIALS

Only Bituminous Materials from Certified Sources are allowed for use. The most current list of Certified Sources can at http://www.dot.state.mn.us/products

SAMPLE SIZE: 1 L (1 qt) for Asphalt Binder (QA) 2 L (½ gal) for Asphalt Emulsion (QA)

Pay Item No.	Material	Spec. No.	Quality Control (QC)	Quality Assurance (QA)	Form No.
2360	Asphalt Binder	3151.2A	QC testing is the responsibility of the bituminous material supplier. Random sampling is arranged by the Mn/DOT Chemical Laboratory.	State inspector observes contractor personnel taking sample. Sample first shipment of each grade of material at the start of a plant's production or after set-up of a portable plant. Thereafter, submit one sample per 1,000,000 liters (250,000 gal). Sample asphalt binder in clean one L (qt) steel container.	2413 Asphalt Sample Identification Card
2201 2321 2355 2356 2357 2514	Asphalt Emulsion	3151.2C		Sample first shipment, then submit one sample per 200 m^3 ((50,000 gal.). Sample asphalt emulsion in clean two L (2 qt.) plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab within 7 days of sampling.	
2321 2357 2358 2514	Cutback Asphalt	3151.2B		Cutback Asphalt should only be used in cold temperature applications with the Engineer's approval. Contact Bituminous Engineering Unit for cold temperature application guidelines. Pressure fit 1 L (1qt.) cans for cutback asphalt.	

10. Moisture Content in Mixture (QC only)

QC Testing

Sampling and testing shall be conducted by the Contractor on a daily basis unless exempted by the Engineer and tested according to the procedures in the Bituminous Manual (5-693.950). Moisture contents above 0.3% are not allowed.

Note #1 Projects with bituminous tonnage less than or equal to 272 metric tons (300 tons) per day may be accepted on a small quantity basis at the discretion of the Engineer. Retain Form 02415 or Form 2403 in Project File.

II. Bituminous Construction for Specification 2360

B. Bituminous Production for Specification 2360 (cont.)

Note #2 All QA test samples shall be from split samples.

If a member of the monitoring team observes the Contractor Test, note and sign under remarks.

The Project Engineer is responsible for:

1.) Reviewing control charts & Test summary sheets for accuracy and completeness,

2.) Checking sampling and testing procedures,

3.) Discussing QC problems with the Contractor,

4.) Obtaining Verification Samples,

5.) When additional testing is necessary, collect QA samples which have been acquired and retained by the Contractor and/or additional verification samples.

Note #3 For process control testing, acceptance will be based on Contractor's test results as verified by Mn/DOT test results.

Note #4 Bituminous mixes composed entirely of Class A and/or Class B aggregates are not required to be tested for CAA (Coarse Aggregate Angularity).

Note #5 When the required sampling rate is one test per 500 tons, divide the bituminous mixture production planned for the day by 500, and round up to the next higher whole number; this will be the number of tests required for the day. When the required sampling rate is one test per 1000 tons, divide the bituminous mixture production planned for the day by 1000, and round up to the next higher whole number; this will be the number of tests required for the day. When the required sampling rate is one test per 2000 tons, divide the bituminous mixture production planned for the day by 2000, and round up to the next higher whole number; this will be the number of tests required for the day.

Note #6 The Department will select at least one of the two companion cores per lot to be tested for mat density. However, the Department may elect to test all companions to provide a direct verification of all individual and daily average test results. Agency representative observes all Contractor coring, sawing, measuring and testing, and takes possession of Mn/DOT cores after sawing. Agency cores shall be transported and tested at the Laboratory (Agency field or District/Division) as soon as possible to prevent damage due to improper handling or exposure to heat. A completed coring log shall be submitted to the Laboratory (Agency field or District/Division).

Note #7 Mixtures that contain shingles will require a minimum of one spot check per day in addition to the required method (b) or (c) used for % total AC. The spot checks will be used for the determination of new added asphalt binder.

Note #8 Mn/DOT projects in the 2010 Construction season will require the calculated Adjusted Asphalt Film Thickness (AFT). VMA will still be calculated for informational purposes, but will not be used for acceptance criteria. The adjusted AFT shall be calculated each time a gradation test is required.

Note #9 One gradation per 450 metric tons (500 tons) per mix blend, at the start of production, for first 1,800 metric tons (2,000 tons) of mixture produced, then one gradation per 900 metric tons (1000 tons) or portion thereof, of mixture produced with a minimum of one test per day.

Note #10 When required, Longitudinal Joint (LJ) Density will be evaluated at random lots as determined by the engineer. Number of LJ lots for the day = number of lots calculated for mat density divided by .20 and rounding up to the next integer. Minimum of one LJ lot per day. For designated LJ lots the agency will test at least one of the mat density companion cores and at least one of the LJ companion cores.

Note #11 Random number generation and determination of random sample location shall be consistent with the Mn/DOT Bituminous Manual Section 5-693.7 Table A or Section 5 of ASTM D3665. The Engineer may approve alternate methods of random number generation.

Note #12 Dispute resolution procedure for material testing is on file in Mn/DOT Bituminous Engineering Unit and also available on the Bituminous Office Website: http://www.dot.state.mn.us/materials/bituminousdocaids.html

III. Seal Coat Construction Items for 2356 Special Provisions

A. (2356) Bituminous Seal Coat

DEFINITIONS				
Sample Type	**Description**	**Sample Location Determined By**	**Sample Taken By**	**Sample Tested By**
	Definitions from 23 CFR 637.203			
QA Quality Assurance	All those planned and systematic actions necessary to provide confidence that a product or service will satisfy given requirements for quality			
QC Quality Control	All contractor/vendor operational techniques and activities that are performed or conducted to fulfill the contract requirements.	Contractor	Contractor	Contractor
Verification sampling and testing	Sampling and testing performed to validate the quality of the product.	Agency	Agency	Agency
	Mn/DOT Definition			
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

Should unique circumstances arise on a project which makes the quantities or rates of testing materials impractical, they may be revised prior to performing the work by contacting the Pavement Management Unit and obtaining their approval. The testing rates shown are only minimums.

III. Seal Coat Construction Items for 2356 Special Provisions (cont.)

A. (2356) Bituminous Seal Coat (cont.)

SAMPLE SIZE:	Mix Design: 150 lbs.				
Pay Item No.	**Test Type**	**Spec. No.**	**Quality Control (QC)**	**Quality Assurance (QA)**	**Form No.**
2356	Seal Coat Mix Design Gradation and Aggregate Qualities	2356	One per source Average gradation during production. % Shale Static Stripping Test Flakiness Index Los Angeles Rattler Aggregate design application rate. Bit. Material design application rate Loose unit mass (weight) of the aggregate Bulk specific gravity of the aggregate	Verify all QC results and review mix design.	
2356	Seal Coat Aggregate Stockpile Production Gradation Construction	2356	Test for gradation. One per day, or one per 1360t (1500 tons), whichever is greater. If a temporary stockpile is used, test at this location. Sample for gradation. One per day. Test if required by the Engineer. All samples shall be taken from chip spreader hopper.	Test for gradation. One per day, or one per 1360t (1500 tons), whichever is greater. If a temporary stockpile is used, test at this location. Sample for gradation. One per day. Test if required by the Engineer. All samples shall be taken from chip spreader hopper.	
2356	Seal Coat Emulsion Application rate Fog Seal Emulsion Application rate		Use a Certified Source. Verify the application rate daily by dividing the volume used by the area covered. Use a certified source. Verify the application rate daily by dividing the volume used by the area covered.	Sample first shipment, then submit one sample per 200 m^3 (50,000 gal.). Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab. One sample to test for dilution rate. Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab.	2413 Asphalt Sample ID Card 2413 Asphalt Sample ID Card

III. Seal Coat Construction Items for 2356 Special Provisions (cont.)

B. (2356) Seal Coat – Micro-Surfacing

SAMPLE SIZE: Mix Design: 150 lbs.					
Pay Item No.	**Test Type**	**Spec. No.**	**Quality Control (QC)**	**Verification**	**Form No.**
2356	Mix Design	2356	One per source	Verify all QC results and review mix design.	
	Gradation and Aggregate Qualities		Average gradation during production. Sand Equivalent Abrasion Resistance Soundness		
	Asphalt Emulsion	3151	Certified Source		
			Residue after Distillation Softening Point Penetration at 25C (77F) Absolute Viscosity at 60C (140F)		
	Mix Design		Wet Stripping Wet Track Abrasion Loss - one hour soak - six day soak Saturated Abrasion Compatibility Mix Time at 25C (77F) Mix Time at 37.4C (100F)	Review test results submitted in the mix design format required in the special provision.	
2356	Aggregate Stockpile Production		Test for gradation. One per day, or one per 1360t (1500 tons), whichever is greater. If a temporary stockpile is used, test at this location.		
	Construction		Sample for gradation, sand equivalence and moisture content. One per 435.6 metric tons (500tons), minimum of one per day.	Test for gradation. One per 1360t (1500 tons), If a temporary stockpile is used, test at this location. Determine moisture content. One per day	
2356	Micro Surfacing Emulsion		Use a Certified Source.	Sample first shipment, then submit one sample per 200 m^3 (50,000 gal.). Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab.	2413 Asphalt Sample ID Card
	Quantity		Verify the quantity using equipment counter readings.		
	Fog Seal (when required)		Use a certified source.	One sample to test for dilution rate. Sample asphalt emulsion in plastic container with wide screw top and immediately send to Mn/DOT Chemical Lab.	2413 Asphalt Sample ID Card
	Application rate		Verify the application rate daily by dividing the volume used by the area covered.		

IV. Concrete Construction Items (www.dot.state.mn.us/materials/concrete.html)

The testing rates shown in this Schedule of Materials Control are minimums. All samples shall be taken in a random manner using an appropriate number generator. Take as many tests as necessary to ensure quality concrete.

Field testing is required for small quantity concrete pours that are ≤ 20 m^3 (yd^3) per day. Document quantities on Form 2448 Weekly Concrete Report. If concrete quantities on the entire project total < 100 m^3 (yd^3), Form 02415 or Form 2403 Inspection Report for Small Quantities may be used.

It is recommended that the Agency Plant Monitor be present during critical pours, such as superstructure or paving concrete (ie. 3Y33, 3Y36, 3Y46, 3A21).

If any field test fails, reject the concrete or if the Producer makes adjustments to the load to meet requirements, record the adjustments on the Certificate of Compliance and the Weekly Concrete Report. Retest the load and record the adjusted test results. Make sure the next load is tested before it gets into the work.

If batching adjustments are made at the plant, test the adjusted load, before it gets into the work. Continue to test the concrete when test results are inconsistent or marginal.

The first load of concrete for any pour must have passing air content and slump results, prior to placing.

Material not meeting requirements shall not knowingly be placed in the work. If failing concrete inadvertently gets placed in the work, either the Mn/DOT Standard Specifications for Construction or the Schedule of Price Reductions for Concrete address penalties.

It is recommended that the Agency representative continually monitor the progress of all concrete pours in the field and review Certificates of Compliances. It is not a recommended practice to only perform minimum testing requirements and leave the pour.

Should circumstances arise on a project which makes the testing rate impractical, contact the Concrete Engineering Unit.

DEFINITIONS				
	Description	**Sample Location Determined By**	**Sample Taken By**	**Sample Tested By**
QC	Quality Control Testing performed by Contractor. Also known as Process Control Testing.	Contractor	Contractor	Contractor
QA	Quality Assurance Testing performed by the Agency. This test is performed on a companion sample to the Contractor's QC sample.	Contractor	Contractor	Agency
Verification	A sample to assure compliance of the Contractor's Quality Control program. The results shall be included as part of the QA Testing Program.	Agency	Agency	Agency
Verification Companion	A companion sample to the Agency's Verification sample provided to the Contractor. The Contractor is required to test this sample. The results shall be used as part of the QC program.	Agency	Agency	Contractor
IAST	The Independent Assurance Sampling and Testing assures testers are sampling and testing properly and that equipment is calibrated correctly.	Agency	Contractor or Agency	Contractor or Agency

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Plant Batching Materials

Remarks:

(1) All materials must come from certified or approved sources. All certified sources must state so on the delivery invoice.

(2) The most current list of certified/approved sources can be found at www.dot.state.mn.us/products.

Sample Sizes:

Cementitious: 2 kg (5 lb)

Admixture: 0.25 L (1/2 pt) Producer obtains samples from dispensing tubes. Store samples in plastic container.

Water: 3.5 L (1 gal) Store sample in a clean glass or plastic container.

Pay Item No.	Material	Spec. No.	Minimum Required Sampling Rate for Laboratory Testing	Form No.
2301 2302 2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Portland Cement Slag Blended Cement	3101 3102 3103	1 sample per project or 1 every 3 months, whichever is less. The Producer obtains and stores the sample in a sealed container provided by the Agency, and includes the supplier's delivery invoice from which the sample is obtained. Take additional samples as Concrete Engineer directs.	24300 ID Card Cement Samples
	Fly Ash	3115		24308 ID Card Fly Ash Samples
	Admixtures (Accelerating, Retarding, Water-Reducing, Air-Entraining, etc.)	3113	For Concrete Paving: 1 sample of each shipment For Other Concrete: 1 sample per project or 1 every 3 months, whichever is less. The Producer obtains and stores the sample in a sealed container provided by the Agency.	2410 Sample ID Card
	Water	3906	1 sample from any questionable source	2410 Sample ID Card
2301	Alkali Silica Reactivity (ASR) Testing	2301	1 per project Write "Project Specific ASR Testing" on 2410 Sample ID card for the first sand quality and cementitious samples submitted.	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified Ready-Mix - Concrete Plant Production

Remarks:

(1) Mix design is provided by Mn/DOT unless otherwise specified in the Contract.

(2) All QC and Verification gradation tests require companion samples. Samples taken at location identified on Contact Report located at plant.

(3) Perform Quality testing as directed by the Concrete Engineer.

Sample Sizes:

Gradation:

		Quality:		**Moisture:**	
+19 mm (3/4" Plus)	10 – 15 kg (25 lb.)	Coarse Aggregate	25 kg (50 lb.)	Coarse Aggregate	2000 g (4.4 lb.)
–19 mm (3/4" Minus)	5 – 7 kg (10-15 lb.)	Fine Aggregate	15 kg (30 lb.)	Fine Aggregate	500 g (1.1 lb.)
CA-70, Sand	5 kg (10 lb.)				

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2302 2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Gradation Testing (QC/QA) (5-694.145 and 5-694.148)	2461 3126 3137	**When over 20 m^3 (yd^3) of Agency concrete produced per day:** **Coarse:** 1 per 100 m^3 (yd^3) **Fine:** 1 per 200 m^3 (yd^3) Passing aggregate gradations are required prior to the start of concrete production each day. Performing testing on representative material at the end of the most recent day of production is allowed. Washing the fine aggregate gradation (QC) sample is not required when the result on the -75µm (#200) sieve of the unwashed sample is less than 1.0%, Hold QA (QC companion) samples until they are picked up by the Agency monitor. Discard after two weeks if not picked up.	Test the previous 3 QA (QC companion) samples when a Verification test fails or when a Verification Companion is outside of Lab-Field Tolerance.	21763 Concrete Aggregate Worksheet (QC/QA) 2449 Weekly Concrete Aggregate Report

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified Ready-Mix - Concrete Plant Production (cont.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2302 2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2519 2521 2531 2533 2545 2550 2554 2557 2564 2565	Gradation Testing (Verification/ Verification Companion) (5-694.145 and 5-694.148)	2461 3126 3137	Test the Verification Companion sample. Complete on the day the sample was taken. Wash all fine aggregate Verification Companion samples.	**Coarse and Fine:** 1 per day or 1 per 1000 m^3 (yd^3) whichever results in the lowest sampling rate. - 2 Verification samples per week when Agency production is 3 or more days per week. When $\leq$ 20 m^3 (yd^3) of Agency concrete is produced **per week,** Verification samples are not required. Take additional Verification samples when production problems exist.	2449 Weekly Concrete Aggregate Report 24143 Weekly Certified Ready-Mix Plant Report (Verification)
	Quality Testing including Coarse Aggregate Testing on -75µm (#200) (5-694.146)	3126 3137	Producer's/Contractor's Discretion	1 test each fraction per month	2410 Sample ID Card
	Aggregate Moisture Testing (QC) (5-694.142)	2461	**When over 20 m^3 (yd^3) of Agency concrete produced per day:** **Coarse and Fine:** 1 per 200 m^3 (yd^3) or completed every 4 hours, whichever results in the highest sampling rate. - Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day. - If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed. In this event, the four-hour rate will commence with the first pour of the day, regardless if it is placed in Agency or private work. - A moisture probe is allowed in lieu of performing oven dry moisture contents on fine aggregate, provided an oven dry moisture comparison is performed at a minimum rate of 1 per week. Perform the initial moisture content by the oven dry method for all critical pours involving any of the following mixes (3Y33, 3Y36, 3Y46, 3A21).	None	2152 Concrete Batching Report

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified Ready-Mix for Concrete Paving - Concrete Plant Production

Remarks:

(1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.

(2) A certified ready-mix plant shall be **dedicated (provides concrete only to the concrete paving project)** when more than 350 cubic meters (cubic yards) of concrete production is ordered.

(3) When a certified ready-mix plant is used for concrete paving, a Contractor QC Technician and Agency Plant Monitor are **required to be present** during dedicated pours and when w/c incentives apply.

(4) All gradation samples shall be taken in the presence of the Agency, unless otherwise authorized by the Engineer. All gradation and quality tests require companion samples.

(5) Perform Quality testing as directed by the Concrete Engineer.

Sample Sizes:

Gradation:		**Quality:**		**Moisture:**	
+19 mm (3/4" Plus)	10 – 15 kg (25 lb.)	Coarse Aggregate	25 kg (50 lb.)	Coarse Aggregate	2000 g (4.4 lb.)
–19 mm (3/4" Minus)	5 – 7 kg (10-15 lb.)	Fine Aggregate	15 kg (30 lb.)	Fine Aggregate	500 g (1.1 lb.)
CA-70, Sand	5 kg (10 lb.)				

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Gradation Testing (QC/QA) (5-694.145 and 5-694.148)	2461 3126 3137	**Coarse and Fine:** 1 per 250 m^3 (yd^3) or completed every 4 hours, whichever results in the highest sampling rate. Passing aggregate gradations are required prior to the start of concrete production each day. Performing testing on representative material at the end of the most recent day of production is allowed. Washing the fine aggregate gradation (QC) sample is not required when the result on the -75µm (#200) sieve of the unwashed sample is less than 1.0%, Hold QA (QC companion) samples until they are picked up by the Agency monitor. Discard after two weeks if not picked up. **When well-graded aggregate incentives apply: Use the Contractor's gradation results for calculations**	**Coarse and Fine:** Test the first 4 samples each time the Contractor mobilizes the plant or changes aggregate sources. 1 QA gradation per day is performed on randomly selected Contractor samples thereafter.	21763 Concrete Aggregate Worksheet (QC/QA) 2449 Weekly Concrete Aggregate Report 24143 Weekly Certified Ready-Mix Plant Report

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified Ready-Mix for Concrete Paving - Concrete Plant Production (cont.)					
Pay Item No.	**Test Type**	**Spec. No.**	**Producer/Contractor Testing**	**Agency Testing**	**Form No.**
2301	Aggregate Moisture Testing (QC/Verification) **(5-694.142)**	2461	**Coarse and Fine:** 1 per 250 m^3 (yd^3) or completed every 4 hours, whichever results in the highest sampling rate unless w/c incentives apply. Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day. If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed. In this event, the four-hour rate will commence with the first pour of the day, regardless if it is placed in Agency or private work. **Moisture Probes are not allowed during concrete paving.**	**If w/c incentives apply:** **Coarse and Fine:** 1 per 250 m^3 (yd^3) or completed every 4 hours, whichever results in the highest sampling rate. Do not leave samples unattended.	2152 Concrete Batching Report
	Water Content Determination Test (Verification) **(5-694.532)**		Sample the fresh concrete at the plant.	**If w/c incentives apply:** Water content determination testing is completed in conjunction with Agency aggregate moisture testing. Initial samples for moisture and microwave testing should be taken after batch ticket water has stabilized. Do not leave samples unattended.	Microwave Oven Worksheet
	Unit Weight (QC) (5-694.542)		Test the first load of concrete at the plant.	None	
	Air Content (QC) (5-694.541)	2461	Test the first load of concrete at the plant. The minimum air content shall be 7.0% prior to leaving the plant.	None	Certificate of Compliance
	Coarse Aggregate Testing on -75 µm (#200) (QC/QA) (5-694.146)	3137	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question. 1 test per day thereafter	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question.	
	Quality Testing	3126 3137	At Contractor's discretion	1 test each fraction every 5 days of production.	2410 Sample ID Card

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Certified Ready-Mix for Concrete Paving - Concrete Plant Production (cont.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Coarse Aggregate Quality Testing for Incentive/ Disincentive	3137	At Contractor's discretion	**When coarse aggregate quality incentives apply:** Test the Class B aggregates for % absorption and Class C aggregates for % carbonate including any other tests necessary to make those determinations. The sampling rate for the two largest fractions: Plan m^3 **[cubic yards]** of concrete: Samples per fraction (n) 5,000 – 25,000: 10 25,000 – 50,000: 15 50,000+: 20	Coarse Aggregate Quality Incentive/ Disincentive Spreadsheet

Concrete Paving Batch Plant - Concrete Plant Production

Remarks:

(1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.

(2) A Contractor QC Technician and Agency Plant Monitor are required to be present during the entire pour.

(3) All gradation samples shall be taken in the presence of the Agency, unless otherwise authorized by the Engineer. All gradation and quality tests require companion samples.

(4) Perform Quality testing as directed by the Concrete Engineer.

Sample Sizes:

Gradation:

		Quality:		**Moisture:**	
+19 mm (3/4" Plus)	10 – 15 kg (25 lb.)	Coarse Aggregate	25 kg (50 lb.)	Coarse Aggregate	2000 g (4.4 lb.)
–19 mm (3/4" Minus)	5 – 7 kg (10-15 lb.)	Fine Aggregate	15 kg (30 lb.)	Fine Aggregate	500 g (1.1 lb.)
CA-70, Sand	5 kg (10 lb.)				

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Gradation Testing (QC/QA) (5-694.145 and 5-694.148)	3126 3137	**When over 200 m^3 (250 yd^3) is produced per day:** 1 per 750 m^3 (1000 yd^3) or completed every 4 hours, whichever results in the highest sampling rate. 5 per day maximum **When well-graded aggregate incentives apply:** Use the Contractor's gradation results for well-graded aggregate incentive calculations	Test the first 4 samples each time the Contractor mobilizes the plant or changes aggregate sources. 1 QA gradation per day is performed on randomly selected Contractor samples thereafter.	21764 Concrete Aggregate Worksheet JMF Well-graded aggregate summary spreadsheet

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Paving Batch Plant - Concrete Plant Production (cont.)

Pay Item No.	Test Type	Spec. No.	Producer/Contractor Testing	Agency Testing	Form No.
2301	Coarse Aggregate Testing on -75 µm (#200) (QC/QA) **(5-694.146)**	3137	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question. 1 test per day thereafter	Test the first 4 samples of production each time the Contractor mobilizes the plant, changes aggregate sources, or the cleanliness of the coarse aggregate is in question.	
	Aggregate Moisture Testing (QC/Verification) (5-694.142)		Complete the initial moisture content and adjust the batch water prior to the start of concrete production each day. If weather conditions allow, performing moisture testing on representative material at the end of production the prior evening is allowed.	1 per 750 m^3 (1000 yd^3) or completed every 4 hours, whichever results in the highest sampling rate. Do not leave samples unattended.	Computerized Microwave Oven Worksheet
	Water Content Determination Test (Verification) **(5-694.532)**		Sample the fresh concrete at the plant.	Water content determination testing is completed in conjunction with Agency aggregate moisture testing. Initial samples for moisture and microwave testing should be taken after batch ticket water has stabilized. Do not leave samples unattended.	
	Unit Weight (QC) (5-694.542)		Test the first load of concrete at the plant.	None	
	Air Content (QC) (5-694.541)	2461	Test the first load of concrete at the plant. The minimum air content shall be 7.0% prior to leaving the plant.	None	
	Quality Testing (Verification)	3126 3137	At Contractor's discretion	1 test each fraction every 5 days of production.	2410 Sample ID Card
	Coarse Aggregate Quality Testing for Incentive/ Disincentive	3137	At Contractor's discretion	**If coarse aggregate quality incentives apply:** Test the Class B aggregates for % absorption and Class C aggregates for % carbonate including any other tests necessary to make those determinations. The sampling rate for the two largest fractions: Plan m^3 [**cubic yards**] of concrete / Samples per fraction (n) 5,000 – 25,000 / 10 25,000 – 50,000 / 15 50,000+ / 20	Coarse Aggregate Quality Incentive/ Disincentive Spreadsheet

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Materials

Remarks:

(1) Refer to Metallic Materials and Metal Products for sampling requirements for concrete reinforcement.

(2) Only curing and joint materials from approved sources are allowed. The most current lists can be found at www.dot.state.mn.us/products.

Sample Sizes:

Curing Materials:

Burlap:	1 m^2 (yd^2)	
Paper and Plastic:	0.25 m^2 (2 ft^2)	
Membrane Compound	1 liter (1 qt)	Materials must be thoroughly stirred or agitated immediately prior to taking sample. Store sample in steel container and cover immediately.

Joint Materials:

Hot Poured Elastomeric:	5 kg (10 lb)	Take samples from application wand.	Preformed Elastomeric:	2 m (6 ft)
Silicone Joint Sealer:	0.5 liter (1 pt)	Store sample in steel container.	Preformed:	0.25 m^2 (2 ft^2)

Pay Item No.	Material	Spec. No.	Minimum Required Field Sampling Rate	Form No.
2301 2302 2401 2411 2514 2521 2531	Preformed	3702	Visual Inspection	2410 Sample ID Card
2301 2302 2401	Preformed Elastomeric Type	3721	1 per lot	
	Silicone Joint Sealer	3722	1 per lot	
	Hot Poured Elastomeric Type	3723 3725	1 per lot	
2301 2302 2401 2411 2514 2520 2521 2531 2533	Burlap	3751	Visual Inspection	
	Paper	3752	Visual Inspection - Must be white opaque	
	Membrane Curing Compound	3754 3754AMS 3755	Refer to the approved products list of curing compounds for **pre-approved** lots at http://www.mrrapps.dot.state.mn.us/CuringCompoundProducts/curingcompounds.aspx	
	Plastic	3756	Visual Inspection -Must be white opaque A Certificate of Compliance shall be submitted to the Project Engineer from the Manufacturer certifying that the plastic complies with AASHTO M171.	

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Bridges and General Concrete				
Pay Item No.	**Test Type**	**Spec. No.**	**Agency Testing**	**Form No.**
2401 2405 2411 2412 2422 2452 2461 2506 2511 2514 2520 2521 2531 2533 2545 2550 2554 2557 2564 2565	Air Content (Verification) (5-694.541)	2461	1 per 100 m^3 (yd^3) Test first load each day per mix Test when admixture adjustments are made to the mix.	2448 Weekly Concrete Report
	Slump (Verification) (5-694.531)	2461	1 per 100 m^3 (yd^3) Test first load each day per mix 1 per day for slip form placement Test when admixture adjustments are made to the mix.	
	Concrete Temperature (Verification) (5-694.550)	2461	Record temperature each time air content, slump, or strength test specimen is performed/fabricated.	
	Compressive Strength (Verification) (5-694.511)	2461	1 cylinder per 100 m^3 (yd^3) 1 cylinder per day for sidewalk and curb and gutter A set of 3 cylinders shall be made when control cylinders are needed. Mn/DOT standard cylinder mold size is 100 x 200 mm (4 x 8 inch). If aggregate has a maximum size greater than 31.5 mm (1-1/4 inch), use 150 x 300 mm (6 x 12 inch) molds.	2409 ID Card Concrete Test Cylinder

Concrete Field Testing – Cellular Concrete				
Pay Item No.	**Test Type**	**Spec. No.**	**Agency Testing**	**Form No.**
2519	Compressive Strength (Verification) **(5-694.511)**	2461 2519	1 set of 4 cylinders per day 100 x 200 mm (4 x 8 inch) cylinders shall be filled in two equal lifts, do not rod the concrete, lightly tap the sides, cover and move to area with minimal or no vibration. Do not disturb for 24 hours.	2409 ID Card Concrete Test Cylinder

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Pavement

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2301	Air Content Before Consolidation (QC/QA) (5-694.541)	2461	1 per 300 m^3 (300 yd^3) Test first load each day per mix	1 air test per day	2448 Weekly Concrete Report
	Air Content After Consolidation (QC/QA) (5-694.541)	2461	Test 1 air content per ½ day of slip form paving to establish an air loss correction factor (ACF). See Special Provisions for additional information.	1 air test per day	
	Slump (QC/QA) (5-694.531)	2461	1 per 300 m^3 (300 yd^3) Test first load each day per mix 1 per day for slip form paving	1 slump test per day	
	Concrete Temperature (QC/QA) (5-694.550)	2461	Record temperature each time air content, slump or strength test specimen is performed/fabricated by the Contractor.	Record temperature each time air content, slump or strength test specimen is performed/fabricated by the Agency.	
	Flexural Strength (QC) (5-694.521)	2301	1 beam (28-day) per day - Make additional control beams as necessary. - Control beams shall be made within the last hour of concrete poured each day. Fabricate beams, deliver beams to curing site, and clean beam boxes.	Supply beam boxes, cure, and test beams.	2162 Concrete Test Beam Data
	Concrete Pavement Texture (QC)	2301	1 per 1000 linear feet per lane of concrete pavement at locations determined by the Agency. All adjoining lanes shall be tested at the same location if paved at the same time. The Contractor supplies all materials necessary to perform the required testing.	Determine texture testing locations using random numbers.	Concrete Texture spreadsheet…
	Thickness (QC/Verification)	2301	The Contractor drills concrete cores. In addition to coring, the Contractor may be required to verify the thickness of the concrete by other methods at a rate specified in the Special Provisions of the contract.	Determine coring locations using random numbers. Initial pavement at core locations and re-initial the sides of specimens after coring to clearly verify their authenticity.	24327 Field Core Report
	Surface Smoothness	2301	Contractor provides Mn/DOT certified inertial profiler results for bumps/dips and/or Areas of Localized Roughness for the entire project as required by the Contract.	None	Incentive/ Disincentive Smoothness Worksheet

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing - Low Slump Concrete for Bridge Deck Overlays

Remarks:

(1) Mix design is provided by Mn/DOT on the back of the Form 21412 Weekly Report of "Low Slump Concrete" unless otherwise specified in the Contract.
(2) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
(3) Perform Quality testing as directed by the Concrete Engineer.

Sample Sizes:

Gradation:

+19 mm (3/4" Plus)	10 – 15 kg (25 lb.)
–19 mm (3/4" Minus)	5 – 7 kg (10-15 lb.)
CA-70, Sand	5 kg (10 lb.)

Quality:

Coarse Aggregate	25 kg (50 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2404	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148))	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: • Aggregate pit numbers • 1 passing gradation result per fraction each time aggregate is delivered to the site. No quality test results are required. Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site.	2410 Sample ID Card 21412 Weekly Report of "Low Slump Concrete"
	Air Content (Verification) (5-694.541)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day	
	Slump (Verification) (5-694.531)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day For concrete from a concrete-mobile, allow mix to hydrate 4 to 5 minutes before slump test to assure all cement is saturated.	
	Compressive Strength (Verification) (5-694.511)	2461	None	1 cylinder per 30 m^3 (yd^3)	2409 ID Card Concrete Test Cylinder

IV. Concrete Construction Items (cont.) (www.dot.state.mn.us/materials/concrete.html)

Concrete Field Testing – Concrete Pavement Repair (CPR)

Remarks:

(1) Mix design is provided by Mn/DOT unless otherwise specified in the Contract.
(2) Testing rates apply to concrete that is produced on site. (Not from a certified ready-mix plant.)
(3) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
(4) Perform Quality testing as directed by the Concrete Engineer.

Sample Sizes:

Gradation:

+19 mm (3/4" Plus)	10 – 15 kg (25 lb.)
–19 mm (3/4" Minus)	5 – 7 kg (10-15 lb.)
CA-70, Sand	5 kg (10 lb.)

Quality:

Coarse Aggregate	25 kg (50 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2302	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148)	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: • Aggregate pit numbers • 1 passing gradation result per fraction each time aggregate is delivered to the site. No quality test results are required. Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site.	2410 Sample ID Card
	Air Content (Verification) (5-694.541)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day.	2448 Weekly Concrete Report
	Slump (Verification) (5-694.531)	2461	None	1 per 15 m^3 (yd^3) Test at beginning of pour each day.	
	Compressive Strength (Verification) (5-694.511)	2461	None	1 cylinder per 30 m^3 (yd^3)	2409 ID Card Concrete Test Cylinder

Concrete Field Testing –Dowel Bar Retrofit (DBR)

Remarks:

(1) Mix Design is Contractor's responsibility with review by Mn/DOT unless otherwise specified in the Contract.
(2) Testing rates apply to concrete that is produced on site. (Not from a certified ready-mix plant.)
(3) All field gradation samples shall be taken by the Agency. All gradation and quality tests require companion samples.
(4) Perform Quality testing as directed by the Concrete Engineer.

Sample Sizes:

Gradation:

+19 mm (3/4" Plus)	10 – 15 kg (25 lb.)
–19 mm (3/4" Minus)	5 – 7 kg (10-15 lb.)
CA-70, Sand	5 kg (10 lb.)

Quality:

Coarse Aggregate	25 kg (50 lb.)
Fine Aggregate	15 kg (30 lb.)

Pay Item No.	Test Type	Spec. No.	Contractor Testing	Agency Testing	Form No.
2302	Gradation and Quality Testing including Coarse Aggregate Testing on -75µm (#200) (QC/Verification) (5-694.145, 5-694.146) and 5-694.148)	3126 3137	Prior to concrete production, the Contractor shall provide the Agency with: • Aggregate pit numbers • 1 passing gradation result per fraction each time aggregate is delivered to the site. No quality test results are required. Test companion samples at Contractor's discretion.	1 per fraction prior to concrete production and each time aggregate is delivered to the site.	2410 Sample ID Card
	Dowel Bar Retrofit Material Compressive Strength (Verification) (5-694.511)	2301 2302	None	During the pre-production test operations: 1 set of 3 cylinders tested at 3 hours 1 set of 3 cylinders tested at 1 day Testing may need to be repeated if any problems with the dowel bar retrofit material are encountered. First day of production: 1 set of 3 cylinders tested at 3 hours 1 set of 3 cylinders tested at 1 day After the first day of production: 1 cylinder per day during production tested at rate determined by Engineer.	2409 ID Card Concrete Test Cylinder

V. Landscaping and Erosion Control Items

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2105 2571 2575	1. Topsoil Borrow, Select Topsoil Borrow, & Premium Topsoil Borrow [a] Salvaged Topsoil (stockpiled)	3877.2	None	From each source: One composite sample for the first 765 m^3 (1,000 Cu yd) or less. One composite sample for each additional 2,300 m^3 (3,000 Cu yd) or fraction thereof.	10 kg (20 lb.)	[a] Testing takes about three weeks after delivery of the sample to the Department Laboratory. Sampling shall be done once source is identified or existing topsoil is stockpiled. Check acceptance schedule Spec 2105 Table 2105-1. Small Quantity - 230 m^3 (300 Cu yd)
2571 2575 2577	2. Plant Stock & Landscape Materials [b]	3861 and 2571.2A1	Field Inspection at Job Site, submit itemized report for each shipment [c.]			[b] Preliminary inspection will not be done at the source. Material must be in accordance with the Inspection and Contract Administration Guidelines for Mn/DOT Landscape Projects. [c] Utilize "Inspection and Contract Administration Guidelines for Mn/DOT Landscape Projects" to determine and measure minimum and maximum criteria thresholds. The following documentation must be provided as a condition for delivery and approval: 1. A Mn/DOT Certificate of Compliance for Plant Stock, Landscape Materials, and Equipment 2. A valid copy of a nursery stock (dealer or grower) certificate registered with the MN Dept. of Agric. And/ or a current nursery certificate/license from a state or provincial Dept. of Agric. for each plant stock supplier. 3. A copy of the most recent Certificate of Nursery Inspection for each plant stock supplier. 4. Plant material shipped from out-of-state nursery vendors subject to pest quarantines must be accompanied by documentation certifying all plants shipped are free of regulated pests. 5. Bills of lading (shipping documents) for all materials delivered. 6. Invoices for all materials to be used. 7. Each bundle, bale, or individual plant must be legibly and securely labeled with the name and size of each species or variety.
2502 2573 2575 2577	3. Erosion Control Blanket [d]	3885	Visual Inspection	Random - See Footnote **d**	1 m^2 (1 Sq yd)	[d] Periodic tests from approved sources to verify quality. Check Approved/Qualified Products List.

V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2573 2577	4. Erosion Control Netting e	3883	Visual Inspection	Random - See Footnote e	1 m^2 (1 Sq yd)	[e] Periodic tests from approved sources to verify quality. Check Approved/Qualified Products List
2573	5. Silt Fence [f]	3886	Visual Inspection. Check Product Label. Obtain Certificate of Compliance with MARV values	For amounts 300m (1000 ft) or greater.	3 m (9 ft)	[f] Samples sent 21 days prior to use. Check Approved/Qualified Products List (A/QPL) of accepted geotextiles.
2573	6. Flotation Silt Curtain [g]	3887	Visual Inspection			[g] Accepted, based on manufacturers' certification. Check weight of fabric.
2573 2575	7. Erosion Stabilization Mat [h]	3888	Visual Inspection	See Footnote [h]	1 m^2 (1 Sq yd)	[h] Check Approved/Qualified Products List
2573	8. Sediment Mat [i]	3894	Visual Inspection	See Footnote [i]		[i] Periodic tests from approved sources to verify quality.
2573	9. Inlet Protection [j]	3891	Visual Inspection			[j] Check Approved/Qualified Products List (A/QPL) and Specification.
2573	10. Filter Logs [k]	3897	Visual Inspection	None		[k] Check Approved/Qualified Products List (A/QPL).
2573	11. Flocculants [l]	3898	Visual Inspection	None		[l] Check Approved/Qualified Products List (A/QPL).
2571 2575	12. Fertilizer [m]	3881	Visual Inspection			[m] Bagged: Inspected on the basis of guaranteed analysis. Rate based on fertility analysis of slope dressing/topsoil. Bulk: Inspector to obtain copy of invoice of blended material stating analysis. Check the type specified.
2571 2575	13. Agricultural Lime [n]	3879	One gradation test for each 180 Metric Ton (200 ton)			[n] Contractor must supply amount of ENP (Equivalent Neutralizing Power) for each shipment.
2575 2577	14. Mulch Material A. Type 3 Mulch - Certified Weed Free (Certified sources only) [o]	3882	Visual Inspection, Check if from Certified Vendor by Minnesota Crop Improvement Association. Must be tagged, grain straw only.			[o] Certified mulch will be indicated by label.

V. Landscaping and Erosion Control Items (cont.)

Pay Item No	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2571 2575 2577	14. Mulch Material B. Type 6 Mulch – Woodchips	3882	Visual Inspection, one gradation per supplier.	Gradation 1/10,000 yd^3 per supplier.		All wood chips supplied by a supplier outside the Emerald Ash Borer quarantine area or have an Emerald Ash Borer Compliance Agreement with the MDA.
2502 2575 2577	15. Seeds A. Seeds (Certified Vendors Only) (Mixes 100-299) [p]	3876	Check for guaranteed analysis labels. If materials are on hand and past the twelve months, testing must be done.	Sampling only, if quantity used is more than 1800 kg. (4,000 lb.) Send to Brett Troyer M.S. 620	0.5 L (1 pint)	[p] Seed guaranteed as meeting the requirements is identified by official guaranteed analysis labels affixed to each container of seed in addition to the customary seed tag. Any moldy or insect contaminated seed must be rejected.
2502 2575 2577	15. Seeds B. Native Seed (Mixes 300-399) certified seed only [q]	3876	Check if from Certified Vendor by Minnesota Crop Improvement Association, Must be tagged. If materials are on hand and past the twelve months, testing must be done.	Sample only if quantity used is more than 1800 kg (4,000 lb.) Send to: Brett Troyer M.S 620		[q] Certified seed will be indicated by label on containers.
2575	16. Sod [r]	3878	Final Visual Inspection at site.			[r] A Certificate of Compliance must be furnished by the producer to the Engineer for the type of sod supplied showing correct grass varieties.
2571 2575	17. Compost A. Compost Certified Source [s]	3890	Visual Inspection			[s] Check Approved/Qualified Products List (A/QPL). Accepted on the basis of certified test reports furnished to the Engineer by the supplier. Periodic sampling to verify quality.
2571 2575	17. Compost B. Compost Non-Certified Source [t]	3890		Must be sampled - One Sample per 300 m^3 (500 Cu Yd)		[t] Submit samples six weeks before use. Small quantity 75 m^3 (100 Cu Yd) or less.
2575	18. Hydraulic Soil Stabilizer [u]	3884	Slump Test for Type 8	None		[u] Check Approved/Qualified Products List (A/QPL).
2571	19. Peat Moss [v]	3880	Final Inspection at Job Site	For material furnished in bulk; 1 sample for 100 m^3 (100 Cu. yd.) or less. One additional sample for each 200 m^3 or less, thereafter.	2-1/4 kg (5 lb.)	[v] Submit Samples in moisture proof bags. Materials furnished in packaged form may be accepted on the basis of guaranteed analysis.

VI. Chemical Items

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2401	Asphalt Plank	3204	Visual Inspection	1 per 1,000 plank or less of each thickness in each shipment	3 – 1 m (yd) pieces samples from different planks	
2131	Calcium Chloride	3911	Visual Inspection	Liquid: 1 per 40,000 L (1 per 10,000 gal) Dry: 1 per shipment	0.5 L (1 pint) or 0.5 kg (1 lb.) in Plastic Container	
2131	Magnesium Chloride	3912	Visual Inspection	1 per 40,000 L (1 per 10,000 gal.)	0.5 L (1 pint) in Plastic Container	
2331	Hot-Pour Crack Sealant for Crack Sealing/Filling	3719 3723 3725	Visual Inspection	1 per lot. Take samples from application wand. Use caution when handling hot containers	2.26 kg (5 lb.) in Aluminum or steel baking pan.	All material shall be pre-tested before use. Contact Chemical Laboratory to determine if Contractor's lots have been pre-tested.
2481	Waterproofing Materials Membrane Waterproofing System	3757	Visual Inspection	1 per shipment (Membrane Only)	0.1 m^2 (1 Sq Ft)	Only waterproofing systems from approved sources are allowed for use. The most current list can be found at www.dot.state.mn.us/products Membrane Waterproofing System: The manufacturer shall submit a one square foot sample of the membrane along with a letter of Certification and test results stating that the membranes meet the requirements of this specification. Other components of the waterproofing system do not need to be sampled for testing.

VI. Chemical Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2481	Waterproofing Materials Three Ply System Asphalt Primer	3165	Visual Inspection	1 per shipment	0.5 L (1 pt.) in steel container	
2481	Waterproofing Materials Three Ply System Waterproofing Asphalt	3166	Visual Inspection	1 per shipment	0.5 L (1 pt.) in steel container	
2481	Waterproofing Materials Three Ply System Fabric	3201	Visual Inspection	1 per shipment	1 m^2 (1 Sq yd)	
2582	Waterborne Latex Traffic Marking Paint.	3591	Visual Inspection	1 per lot	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Approved Products List are allowed for use. The most current Approved Products list can be found at www.dot.state.mn.us/products
2582	Epoxy Traffic Paint	3590	Visual Inspection	1 Part A per lot 1 Catalyst Part B per lot	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Approved Products List are allowed for use. The most current Approved Products list can be found at www.dot.state.mn.us/products
2582	Traffic Marking Paint	Special Provisions	Visual Inspection	1 Part A per lot 1 Catalyst Part B per lot	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only traffic marking paints from Approved Products List are allowed for use. The most current Approved Products list can be found at www.dot.state.mn.us For traffic marking paints other than Waterborne Latex and Epoxy. See Special Provision for Approved Products List.
2564	Non-Traffic Striping Paints	3500 Series Special Provisions	Visual Inspection	For pre-approved paints submit Form 02415 listing batch number. Call Chemical Laboratory for pre-approved lots	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certification of Compliance. For all others, see Special Provisions. Send color sample to Chemical Laboratory for color matching.

VI. Chemical Items (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2478	Bridge Structural Steel Paint	3520	Visual Inspection	Certificate of Compliance with each batch/lot for each component of the paint system to the Engineer. Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color		**Form 02415** List batch numbers and retain Certificate of Compliance. Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/.
	Exterior Masonry Paint	3584	Visual Inspection	1 per lot Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color.	0.5 L (1 pint)	**Form 02415** List batch numbers and retain Certificate of Compliance Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/
	Noise Wall Stain	Special Provisions	Visual Inspection	Certificate of Compliance for each batch/lot of paint. Provide a color "Draw Down" sample to the Mn/DOT Chemical Laboratory for verification of the finish coat color.		**Form 02415** List batch numbers and retain Certificate of Compliance Only paints from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/
2582	Drop-on Glass Beads	3592	Visual Inspection	1 per lot	1 L (qt.)	**Form 02415** List batch numbers and retain Certificate of Compliance Only glass beads from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/products
2502 2581 2582	Pavement Marking Tape	3354 3355 Special Provisions	Visual Inspection	1 clean sample of each color per lot	3 m (3 yds.)	**Form 02415** List batch numbers and retain Certificate of Compliance. Only pavement marking tape from Approved Products List are allowed for use. The most current Approved Products List can be found at www.dot.state.mn.us/products

VI. Chemical Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2540 2563 2564 2565 2582	Signs and Markers	3352	Visual Inspection	None unless material suspect		**Form 02415** Only Signs and Markers from Qualified Products List are allowed for use. The most current Qualified Products List can be found at www.dot.state.mn.us/products

VII. Metallic Materials and Metal Products

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2554	1. Guard Rail A. Fittings - Splicers, Bolts, etc.	3381	Visual Inspection	Bolts: 2 Post bolts and 4 splice bolts with nuts for each 1,000 units or less.		**Form 02415 or 2403** To be approved before use. Pre-tested or Inspected will carry "Inspected" tag. For non-pre-tested: Submit laboratory samples at required laboratory rate. For small quantities, lab samples not required, but document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less Terminals - 10 or less Post Bolts - 100 or less, Splice Bolts - 100 or less
2554	1.B.i. Non-High Tension Guard Rail Cable	3381	Visual Inspection	1 sample from each spool	1.2 m (4 ft)	**Form 02415 or 2403** To be approved before use. Pre-tested or Inspected will carry "Inspected" tag. For non-pretested: Submit lab samples at required rate. For small quantities, lab samples not required, but document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less, Terminals 10 or less, Post Bolts - 100 or less, Splice Bolts - 100 or less
2554	1. B.ii. High Tension Guard Rail Cable	Special Provisions	Visual Inspection	1 sample per 50,000 feet	1.2 m (4 ft)	
2554	1. Guard Rail C. Structural Plate Beam	3382	Visual Inspection	One sample from one edge of each 200 rail sections or one sample of each 100 terminal sections	Full depth x 0.25 m (full depth x 10")	**Form 02415 or 2403** To be approved before use. Pre-tested or inspected will carry "Inspected" tag. For non-pretested: submit lab samples at required lab rate. For small quantities, samples not required, & document on Form 02415 or 2403 and maintain in project file. Small Quantities: Rail Sections - 20 or less, Terminals 10 or less, Post Bolts - 100 or less, Splice Bolts - 100 or less

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545 2554 2564	2. Steel Sign Posts	3401	Visual Inspection & Certification from Contractor of compliance with Domestic source requirement under 1601, if applicable.	Two posts per shipment of each mass per unit length.	See note	**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. Submit shortest full sized length of each weight, not a scrap piece.
2554 2557	3.Posts for Traffic & Fence A.Steel Fence Posts: Ground and Rail	3403 3406	Visual Inspection, Receiving Paperwork, and for Fence, Certification Form for Type of Fence used.	One sample per 500 pieces. Submit paperwork with sample.		**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. Need full length for posts used in the ground (line, terminal, "C" and anchor posts), not scrap pieces. Need 5' length of top rail and brace bar. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence B. Components: includes: cup, cap, nut, bolt, end clamp, tension band, truss rod tightener, hog ring, tie wire, tension stretcher bar, truss rod, clamp, & tension wire	3376	Visual Inspection & Fence Certification Form for Type of Fence used.	1 each of cup, cap, nut, bolt, end clamp, tension bands, truss rod tightener, 12 hog ring, 6 tie wires, 1 tension stretcher bar; 1 truss rod, cut to 2-foot min. with threaded section, 3 feet tension wire. Submit paperwork with sample.		**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence C.Gates	3379	Visual Inspection & Fence Certification Form for Fence used.	1 per 100 gates. Submit paperwork with sample.	1	**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence D. Barbed Wire Fabric	3376	Visual Inspection, Receiving Papers, and Fence Certification Form for Type of Fence used.	One full height sample per 50 rolls. Submit paperwork with sample.	1 m (3 ft)	**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. See link for cert. form on right side of page, www.dot.state.mn.us/materials/lab.html
2557	3. Fence E. Woven Wire Fabric	3376	Visual Inspection, Receiving Papers, & Fence certification Form for Type of Fence used.	One full height sample per 50 rolls. Submit paperwork with sample.	1 m (3 ft)	**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. See link for cert. form right side of page, www.dot.state.mn.us/materials/lab.html

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2557	3. Fence F. Chain Link Fabric	3376	Visual Inspection, Receiving Papers, and Fence Certification Form for Type of Fence used.	One full height sample for each 5,000 ft of fencing. Submit paperwork with sample.	0.3 m (1 ft)	**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. See link for certification form on right side of page, www.dot.state.mn.us/materials/lab.html
2402	4. Water Pipe and other Piping Materials	3364, 3365, 3366 & Special Provisions				**Form 02415 or 2403** Most projects have a domestic steel requirement under 1601 Special Provision. To be identified & tested if necessary prior to use. See Special Provisions.
2201 2301 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel A. Bars – Uncoated	3301	Visual Check for Size and Grade Marking	No Field Sample Necessary		**Form 02415 or 2403** For Uncoated bars - Retain Certificate of Compliance and Certified Mill Analysis in Project File.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2201 2301 2401 2405 2411 2412 2433 2452 2472 2514 2531 2533 2545 2564	5. Reinforcing Steel B. Bars - Epoxy Coated	3301	Visual Check for Size and Grade Marking and "Inspected" tag (See Remarks)	One sample (1 bar) of each size bar for each day's coating production	1 m (3 ft)	**Form 02415 or 2403** For Epoxy-Coated bars, steel will be tagged "Inspected" when it has been sampled and tested by Mn/DOT prior to shipment, and it will be tagged "Sampled" when testing has not been completed prior to shipment. If the Epoxy-Coated bars are not tagged "Sampled" or "Inspected", submit samples, Certificate of Compliance, and Certified Mill Analysis.
2401	5. Reinforcing Steel C. Bars Stainless Steel	Special Provisions		One sample (2 Bars) per heat per bar size	1 m (3 ft)	Mill Tests Reports shall be supplied with samples, see Special Provisions.
2401 2411 2452 2472 2564	5. Reinforcing Steel D. Spirals	3305		One per shipment	1 m (3 ft)	
2201 2301 2401 2411 2412 2472 2531	5. Reinforcing Steel E. Steel Fabric	3303	Visual Inspection	No Field Sample Necessary		Retain Certificate of Compliance in project file.
2201 2301 2401 2411	5. Reinforcing Steel F. Dowel Bars	3302		One Dowel Bar from each shipment	Full Size Dowel Bars	For all types of dowels – Each project shall have a Certificate of Compliance from the Manufacturer certifying that all materials used in fabrication of the dowel bars and baskets comply with all applicable specifications. The Manufacturer shall maintain all records necessary for certification by project. The Certificate of Compliance shall be submitted to the Project Engineer.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2401 2405	5. Reinforcing Steel G. Prestressing or Post-Tensioning Strand	3348		One sample (2 strands) from each heat (see **Notes**)	1.8 m (6 ft)	Submit one copy of mill certificate and one copy of the stress-strain curve representative of the lot with the samples. For most manufacturers, a heat equals a production lot, and an individual lot, pack, or reel is a subset of a heat/production lot.
2402 2506 2565	6. Drainage and Electrical Castings	3321 2471 2565	Visual Inspection	All castings: Three tensile bars to be cast with each heat at Foundry and submitted to the lab by an approved Foundry*. See 3321.		**Form 02415 or 2403** Call Maplewood Laboratory at 651-366-5540 for list of approved foundries, or see website. Inspect in the field and retain Form 02415 or 2403 in project file, showing name of foundry and quantity
2401 2402 2411 2433 2545 2554 2564 2565	7. Anchor Rods and Bolts (Cast in Place)	3385	Pre Approved			Notes: Manufacturer must have one yearly passing test from the Department for each anchor rod or bolt type. Prior to installation, obtain copy of Mn/DOT passing test report from supplier. Specs 3385.2 A, B, & C require anchor rod markings per ASTM F 1554 S3. The end of each anchor bolt intended to project from the concrete must be die stamped with the grade identification as follows: Grade 36 = AB36, Grade 55 = AB55, Grade 105 = AB105.
2401 2411 2433	8. Anchorages (Drilled In)	Special Provisions	Visual Inspection	Three complete anchorages		Note: Before installation, verify that anchorages are on the qualified products list www.dot.state.mn.us/products
2402 2405	9. Structural Steel A. For Concrete Girders-Diaphragms and sole plates	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	Form 02415 or 2403 Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply diaphragms and sole plates. A list of approved suppliers can be found on the Bridge Office web site.

VII. Metallic Materials and Metal Products (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402	9. Structural Steel B. Steel Bearings	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	**Form 02415 or 2403** Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply steel bearings. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel C. Expansion joints	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	**Form 02415 or 2403** Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply expansion joints. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel D. Railing-Structural tube and ornamental	2471	Field inspection: Check for damage and defects, especially the coating. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	**Form 02415 or 2403** Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans shall only be used to supply structural tube and ornamental railing. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel E. Drainage Systems	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	**Form 02415 or 2403** Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans (QCP's) shall only be used to supply drainage systems. A list of approved suppliers can be found on the Bridge Office web site.
2402	9. Structural Steel F. Protection Angles	2471	Field inspection: Check for damage and defects. Check dimensions for contract compliance.	None except suspect material quality	Entire lot	**Form 02415 or 2403** Only suppliers (fabricators, galvanizers, paint shops) with approved Quality Control Plans (QCP's) shall only be used to supply protection angles. A list of approved suppliers can be found on the Bridge Office web site.

VIII. Miscellaneous Materials

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2403 2422 2452 2521 2540 2545 2554 2557 2564	1. Timber, Lumber Piling & Posts	3412 to 3471 & 3491	Visual Inspection			**Form 02415 or 2403** Untreated materials shall be inspected in the field and the results reported on Form 02415 or 2403. Treated materials shall be Certified on the Invoice or Shipping Ticket. Material is inspected and stamped by an Independent Agency as per Specification 3491. Contact Laboratory for additional information.
2402 2405 2557 Many	2. Miscellaneous pieces and Hardware (Galvanized)	3392 3394		3 samples of each item per shipment. Sample critical items only. (Critical items are load bearing, structurally necessary items.)	Three of each type.	**Form 02415 or 2403** Will carry "Inspected" tag if sampled and tested prior to shipment. No sample necessary if "Inspected".
2504	3. Insulation Board	3760	Visual Inspection	None		**Form 02415 or 2403**
2402	4. Elastomeric Bearing Pads	3741 and Special Provisions	Check dimensions Check repair of tested pad	One sample, with one or more internal plates annually from each manufacturer.	Full size pad	Submit copy of Certificate of Compliance with pad. Do not use any pads that are not certified.

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2402 2422 2501 2503 2506	1. Corrugated Metal Products A. Culvert Pipe Underdrains Erosion control Structures	3225 thru 3229, 3351 and 3399	Visual Inspection: Check for good construction, workmanship, finish requirements and shipping			**Form 02415 or 2403** Make certain pipe is Certified on Invoice
2501	1. Corrugated Metal Products B. Structural Plate	3231	Visual Inspection: Invoice shall include notation that material described is in accordance with fabricator's Certificate and Guarantee			**Form 02415 or 2403**

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2501	1. Corrugated Metal Products C. Aluminum Structural Plate	3233				The Fabricator's Certificate and Guarantee shall be on file in the Mn/DOT Central Laboratory.
2503 2506	2. Clay Pipe	3251	No samples required for less than 100 pieces	1 sample per 200 pieces of each size.	Full Size Pipe	**Form 02415 or 2403** To be sampled and inspected in the field.
2501 2503 2506	3. Concrete Pipe A. Reinforced Pipe and Arches Precast Cattle Pass Units Sectional Manhole Units	3236	Field Inspection: Check for damage and defects. Check dimensions as required. Check for producer's "Certified" stamp and signature on the certification document.	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5540 for additional information.		**Form 02415 or 2403** For Concrete Pipe Both A & B: Product will be certified by producer, only spot checks are done by plant inspector. Make certain the invoice or certification document is signed and the product has the required markings. Maintain Form 2403 or 02415 in project records, showing source of materials and type and quantity used
2503 2506	3. Concrete Pipe B. Non-Reinforced Concrete Pipe	3253	Field Inspection: Check for damage and defects. Check dimensions as required. Check for producer's "Certified" stamp and signature on the certification document.	2 samples of each size from each source unless inspected and stamped at source.	Full Size Pipe	**Form 02415 or 2403**
2501 2503 2506	3. Concrete Pipe Fine Aggregate	3126		1 quality test per month during production for A and B above.	10 kg. (25 lb.)	
2501 2503 2506	3. Concrete Pipe Coarse Aggregate	3137		1 quality test per month during production for A and B above.	10 kg. (25 lb.)	

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2412	4. Precast/Prestressed Concrete Structures A. Reinforced Precast Box Culvert	3238	1 Air test per day (1st load), 2 cylinders per pour for positive slump concrete (1 for handling, 1 for shipping).	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5540 for additional information.		Precast/prestressed Concrete Structure (beams, posts, etc.) will be inspected and stamped at plant. Field personnel are responsible for checking for plant inspector's stamp, for shipping/handling damage or defects, and dimensions. An inspection report will be completed by plant personnel and sent to the field personnel.
	Fine Aggregate	3126		1 quality test per month during production.	10 kg. (25 lb.)	
	Coarse Aggregate	3137		1 quality test per month during production.	10 kg. (25 lb.)	
2405	4. Precast/Prestressed Concrete Structures B. Precast/Prestressed Concrete Structure (beams, posts, etc.).	2405	1 air test per day (1st load), 2 cylinders per pour for positive slump concrete (1 for handling, 1 for shipping).	1 "companion" cylinder per month per plant during production, or cylinder testing machine, whichever is greater. Call Precast Inspection Engineer at 651-366-5540 for additional information.		Precast/prestressed Concrete Structure (beams, posts, etc.) will be inspected and stamped at plant. Field personnel are responsible for checking for plant inspector's stamp, for shipping/handling damage or defects, and dimensions. An inspection report will be completed by plant personnel and sent to the field personnel.
	Fine Aggregate	3126	Gradation: 1 per 150 m^3 (200 Cu. yd.) or fraction thereof. 1 per day of production or 3 per week, whichever is less.	1 gradation and 1 quality test per month during production from a split sample. Include producer's gradation results on sample card.	10 kg (25 lb.)	
	Coarse Aggregate	3137	Gradation: 1 per 75 m^3 (100 Cu yd) or fraction thereof. 1 per day of production or 3 per week, whichever is less.	1 gradation and 1 quality test per month during production from a split sample. Include producer's gradation results on sample card.	10 kg (25 lb.)	

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2506	5. Manholes and Catch Basins (Construction)	2506 3622	Field Inspection: Check for damage and defects. Check dimensions as required. Check for Producer's "Certified" stamp and signature on the certification document.			**Form 02415 or 2403** Product will be certified by producer or inspected, tested and stamped at source. Only spot checks are done by plant inspector. Make certain the invoice or certification document is signed and the product has the required markings. Maintain Form 2403 or 02415 in project records, showing source of materials and type and quantity used (bricks, blocks, precast, or combination).
2502	6. Drain Tile (Clay or Concrete)	3276	Visual Inspection	2 samples of each size from each source		
2502 2503	7. Thermoplastic (TP) Pipe ABS and PVC	3245	Obtain Certificate of compliance. Check for approved marking printed on pipe. Field Inspect for damage or defects.			**Form 02415 or 2403** See Spec. 3245 for specific AASHTO or ASTM Pipe types are approved under this specification. If perforated, holes should be 5mm - 10 mm (3/16 - 3/8 inch) diameter, two rows for 4", and four rows for 6" diameter; approximately 75 mm (3 inches) on center.
2502	8. Corrugated Polyethylene Pipe – Single wall for edge drains, etc.	3278	Check for markings (AASHTO M 252) Certificate of Compliance. Field Inspect for damage or defects.	No Laboratory tests required		**Form 02415 or 2403**
2503	9. Sewer Joint Sealing Compound	3724		One per shipment	0.5 liter (l pt.)	
2412 2501 2503	10. Preformed Plastic Sealer for Pipe	3726 Type b		One from each source	0.3 m (1 ft)	
2412 2501 2503	11. Bituminous Mastic Joint Sealer for Pipe	3728	Visual Inspection	Sample, if questionable		

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2105	12. EPS Geofoam	Special Provisions	Visual Inspection Check for yellow aged material, uniformity and dimensions. Weigh 1'x1'x1' cut coupon to verify density every 200 m^3 (250 yd^3)			Form 02415 or 2403
2501 2503	13. Corrugated Polyethylene Pipe – Dual Wall, 12" – 48"	3247				For Specification 3247, Corrugated Polyethylene Pipe (HDPE) manufacturing facilities are required to be reviewed yearly and in compliance with AASHTO's National Transportation Product Evaluation Program (NTPEP) for producers of AASHTO M294 HDPE pipe. To determine if a pipe manufacturing plant is qualified, click on the following link for M294 pipe. http://archive.data.ntpep.org/nap/statusReport_PlasticPipe.aspx If a plant has a compliant NTPEP audit for AASHTO M294 pipe at the time the pipe is manufactured, then the plant has met requirements. Note that a previous year's audit shall govern until NTPEP issues the next year's audit. A Certificate of Compliance shall be provided in accordance with Specification 1603.

IX. Geosynthetics, Pipe, Tile, and Precast/Prestressed Concrete (Cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2105 2411 2412 2501 2502 2511 2512	14. Geotextile Fabric and Geogrid Reinforcement	3733 and Special Provisions	Inspect for damage and uniformity of texture. Rolls of both geotextile and geotextile wrapped PE Tubing must be wrapped in UV protective plastic. (Usually Black). Obtain Certificate of Compliance (see Note 1).	(a) 1 per 15,000 m (50,000 LF) or fraction thereof for pipe wrap or trench lining for Permeable base designs. (b) 1 per 8000 m^2 (10,000 sq. yd.) or fraction thereof of each type fabric or geogrid for all other uses. (see Note 2). (c) Sewn seam, if required, 1 per project minimum, additional as appropriate.	(a) 3m (10 Lin. Ft.) (b) $3m^2$ (4 sq. yd.)* (c) 3m (10 Lin. Ft.)**	Certificate of Compliance shall state material identification (e.g. Propex 2002, Miragrid 8XT), and minimum average roll values (MARV) for all specified geotextile properties. MARV values must meet the Specification 3733 Types 1 through 7 requirements for the specific application. Submit copy of Certificate with material samples sent to the Materials Laboratory. Submit additional sample(s), if the manufacturer or model of geotextile or geogrid used changes during construction. Sampling shall be by random selection and no more than one sample shall be taken from an individual roll. For type 6 applications (including geogrids), submit pages of Special Provisions that list required material properties. (Type 6 requirements are job specific.) For Modular Block Walls or Reinforced Soil Slopes, submit page(s) of shop drawings that reference geogrid/geotextile to be used (product name) and/or required properties. Contact Randy Tilseth, Geotechnical Section, 651-366-5451 for large quantity sampling rates (greater than 40,000 sq. yd. of material on project), small quantity testing, and questions. * Do not sample first full turn of rolled product. ** Seam sample to include approximately 1 m (3 ft.) of geosynthetic material on each side of seam (in direction perpendicular to seam).

X. Brick, Stone, and Masonry Units

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2506	1. Brick A. Sewer (clay) and Building	3612 to 3615	Visual Inspection	One sample per 50,000 brick or fraction thereof	6 whole bricks	
2506	1. Brick B. Sewer (Concrete)*	3616	Visual Inspection	One sample per shipment.	6 whole bricks	* Air entrainment required. Obtain air content statement from supplier.
2506	2. Concrete Masonry Units A. For Sewer Construction	3621	Visual Inspection	One sample per shipment	6 whole units	Air entrainment required. Obtain air content statement from supplier.
2411	2. Concrete Masonry Units B. For Modular Block Retaining Walls	Special Provisions	Visual Inspection Check for cracks and broken corners	One sample per 10,000 units or fraction thereof, with a minimum of one sample per product (block) type per contract.*	5 whole units	All lots of block upon delivery shall have Manufacturer or Independent laboratory test results to verify passing both compression and freeze-thaw requirements. * Wall units and cap units are considered separate block types.
2422	3. Reinforced Concrete Cribbing	3661	Concrete control tests Air Tests Visual Inspection if previously tested	One cylinder per 100 units, but not less than 5 cylinders for a given contract. Other materials as required herein.	150 x 300mm (6 x 12 in) Cylinders	Form 02415 or 2403 Will be stamped when inspected prior to shipment.
2511 2512 2577	4. Stone for Masonry or Rip-Rap	3601 and Special Provisions	Visual Inspection Submit Form 02415 unless special testing is specified			Form 02415 or 2403 Each source shall be approved by Project Engineer or Supervisor for quality, prior to use. For questions on quality, contact District Materials or Geology Unit.

XI. Electrical and Signal Equipment Items

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545	1. Lighting Standards (Aluminum or Steel)	3811	Visual Inspection			The Fabricator will submit "Certificate of Compliance", on a per project basis, to the Structural Metals Engineer.
2545 2550 2565	2. Hand Holes (Precast, PVC, and LLDPE)	2545 2550 2565				Form 02415 or 2403 Traffic signals and street lighting projects require handholes and frames and covers to be listed on the Mn/DOT Approved/Qualified Products List (A/QPL) for signal. For cast iron frame and cover: see VII.6, Drainage Castings
2545 2565	3. Foundation	2545	Slump as needed	1 cylinder per 20 m^3 (25 Cu. yd.)		Rebar is required in concrete foundations as specified in the Contract documents for all traffic signal and street lighting projects.
2402 2545 2565	4. Conduit and Fittings A. Metallic	3801 3802	Visual Inspection	None		Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File
2545 2565	4. Conduit and Fittings B. Non-Metallic (Rigid and HDPE)	3803 Special Provisions	Visual Inspection			Form 02415 or 2403 Conduit shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL). Retain Form 02415 or 2403 in Project File. For traffic signal and street lighting projects, specific requirements are contained in the Special Provisions for each project.
2545 2565	5a. Anchor bolts (cast in place)	2545 2565				See section VII, 7.
2545	5b. Anchorages (Drilled In)	2545				See section VII, 8.

XI. Electrical and Signal Equipment Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545 2565	6. Miscellaneous Hardware	2545 2565	Visual Inspection	Sample critical items only. One of each item per shipment. (Critical Items are load bearing, structurally necessary items.)		Will carry "Inspected tag if sampled and tested prior to shipment. No sample necessary if "Inspected". Do not use if not tested. Field sample at sampling rate for laboratory testing. For traffic signal and street light lighting projects, various miscellaneous hardware is required to be listed on the Mn/DOT Signals and Lighting Approved/Qualified Products Lists (A/QPL). The Contract documents indicate which items must be on the Signals and/or Lighting APL.
2545 2550 2565	7. Cable and Conductors A. Power Conductors Loop Detector Conductors (No Tubing)	3815.2B1 3815.2B2(a)	Visual Inspection	None		Form 02415 or 2403 Make certain the conductors are the type specified. Submit Field Inspection report showing type and quantities used. Shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL) and type where applicable.
2545 2550 2565	7. Cable and Conductors B. Electrical Cables and Single Conductors with Jacket	3815.2B2(b) 3815.2B3 3815.2B5 3815.2C1 3815.2C3 3815.2C4 3815.2C5 3815.2C6 3815.2C7 3815.2C8 3815.2C14 Special Provisions	Visual Inspection	1 sample per size per lot	1.5m (5 ft)	**Form 02415 or 2403** Usually inspected at the distributor. Documentation showing project number, reel number(s), & Mn/DOT test number(s) will be included with each project shipment. If such documentation is not received from Contractor, submit sample for testing along with material certification from manufacturer. Do not use if not tested. Pre-inspected materials will not be tagged; an inspection report will be sent by the Mn/DOT inspector for each shipment. Project inspectors should verify that the shipping documents agree with this inspection report. Call Steve Grover at 651-366-5540 or Cindy Schellack at 651-366-5543 with questions. For traffic signal and street lighting projects, the Special Provisions for each project contain electrical cable and conductor specifications.
2545 2550 2565	7. Cable and Conductors C. Fiber Optic Cables	3815.2C13	Visual Inspection	1 sample per size per lot	1.5m (5 ft)	**Form 02415 or 2403** Fiber optic cables shall be listed on the Mn/DOT Approved/Qualified Products List (A/QPL) for Traffic Management Systems/ITS.

XI. Electrical and Signal Equipment Items (cont.)

Pay Item No.	Kind of Material	Spec. No.	Minimum Required Acceptance Testing (Field Testing Rate)	Minimum Required Sampling Rate for Laboratory Testing	Sample Size	Notes
2545 2565	8. Ground Rods	2545 2565	Visual Inspection	None.		**Form 02415 or 2403** Retain Form 02415 or 2403 in project file. Shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL).
2545	9. Luminaires and Lamps	3810				**Form 02415 or 2403** Traffic signal and street lighting projects require luminaries and lamps to be listed on the Mn/DOT Approved/Qualified Products List (A/QPL) for Lighting. The conductors shall be labeled as being listed by a National Recognized Testing Laboratory (NRTL) and type, where applicable.
2545	10. Electrical Systems					Electrical Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report. To be certified by the Project Engineer.
2565	11. Traffic Signal Systems	2565				Traffic Signal Systems are to be reported as a "System" using the Lighting, Signal, and Traffic Recorder Inspection Report. To be certified by the Project Engineer.

NOTICE TO BIDDERS

Particular note should be made in regard to the clarity of numerals (figures) and to the procedure for alterations and the required certificate as directed by Section 1301.

The following abbreviations may be used in item description and unit of measure in the Schedule of Prices.

A	Arch
A-S	Antiseepage
AB	Asbestos Bonded
ACT	Actuated
AGG	Aggregate
ALUM	Aluminum
ASB	Asbestos
ASPH	Asphaltic
ASSY	Assemblies
B+B	Balled & Burlapped
BC	Bituminous Coated
BIT	Bituminous
BLDG	Building
BR	Bridge
CAL	Caliper
CB	Catch Basin
CEM	Cement
C and G	Curb and Gutter
CI	Cast Iron
C-I-P	Cast-in-Place
CL	Class
COMM	Commercial
CONC	Concrete
COND	Conductor
CONN	Connection
CONST	Construct
CONT	Continuously
CP	Cattle Pass
CTD	Coated
CU FT	Cubic Feet
CU YD	Cubic Yard
CULV	Culvert
CWT	Hundred Weight
DES	Design
DBL	Double
DI	Drop Inlet
DIAM	Diameter
DRWY	Driveway
EXC	Excavation
EXP	Expansion
FAB	Fabric
FE	Fence
FERT	Fertilizer
F+I	Furnish & Install
FOUND	Foundation
FT LG	Feet Long
FURN	Furnish
GA	Gauge
GRAN	Granular
HI	High
INP	In Place
INST	Install
JA	Jacked
LIN FT	Linear Feet
LG	Long
MAINT	Maintenance
MATL	Material
MGM	1000 Board Feet
MET	Metal
MOD	Modification
MPA	Metal Pipe Arch
MTD	Mounted
NON MET	Non Metallic
NON PERF	Non-Perforated
NON REINF	Non-Reinforced
OH	Overhead
P-A	Pipe-Arch
PAVT	Pavement
PERF	Perofrated
PL	Plate
PNEUM	Pneumatic
PREC	Precast
PREST	Prestressed
PVC	Poly Vinyl Chloride
RCPA	Reinforced Concrete Pipe Arch
REINF	Reinforced
RELO	Relocation
RESTOR	Restoration
RMC	Rigid Metallic Conduit
RNMC	Rigid Non Metallic Conduit
RDWY	Roadway
S-G	Sand & Gravel
SIG	Signal
SPE	Special
SQ FT	Square Feet
SQ YD	Square Yard
STA	Station
STD	Standard
STL	Steel
STKPL	Stockpile
STR	Strength
STRUCT	Structural
SPPA	Structural Plate Pipe Arch
SYS	System
T	Traffic
TBR	Timber
TEMP	Temporary
THERMO	Thermoplastic
TRTD	Treated
UNDERGRD	Underground
UNTRTD	Untreated
VAR	Variable
VM	Vehicular Measure
WEAR	Wearing

INSURANCE

The contractor shall not commence work under this contract until he has obtained the following insurance, and such insurance has been approved by the Blue Earth County Attorney.

The Contractor shall deposit with the County Auditor the original, or a certified duplicate copy thereof as applicable to this project, of the Public Liability and Property Damage Insurance and Extended Coverage Policies, required hereunder. The Contractor shall furnish the County with a certificate of insurance from the insurance company issuing the policies as is herein required. All policies shall remain in force and effect on thirty days written notice to the County Auditor before cancellation. The above insurance policies shall be submitted at the same time as the contract and bond as provided in Minn. Statutes 1306.

The Contractor shall procure and maintain during the life of the Contract and until the Contract has been fully accepted, insurance policies as follows:

(A) PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE: For and on behalf of himself, the County of Blue Earth as joint assureds, and with a cross- liability endorsement protection of the County of Blue Earth from claims or damages for personal injuries, including accidental death, as well as for claims for property damage which may arise by the Contractor or by a subcontractor or by anyone directly or indirectly employed by either of them.

Said Public Liability and Public Property Damage Insurance Policy shall provide that the insurance company waives the right to assert the immunity of the County as a defense to any claims made under said insurance.

The amount of such insurance will be as follows: Public Liability Insurance in an amount of not less than One Million Dollars ($1,000,000.00) for all damages arising out of bodily injuries to, or death of one person and subject to the same limit for each person in a total amount of not less than One Million Dollars ($1,000,000.00) on account of one accident, and property damage insurance in an amount not less than One Million Dollars ($1,000,000.00) for all damages to or destruction of property in any one accident and subject to that limit, a total limit of One Million Dollars ($1,000,000.00) for all damages to or destruction of property during the policy period.

(B) WORKER'S COMPENSATION INSURANCE: For all his employees employed at the site of the project and, in case any work is sublet, the Contractor shall require the subcontractor to provide Worker's Compensation Insurance for all his employees.

(C) AUTOMOBILE PUBLIC LIABILITY INSURANCE: One Million Dollars ($1,000,000.00) for all damages arising out of bodily injuries to, or death of one person, and subject to that limit for each person, a total of One Million Dollars ($1,000,000.00) for all damages to or destruction of property in any one accident and subject to that limit, a total of One

Million Dollars ($1,000,000.00) for all damages to or destruction of
property during the policy period, if any motor vehicles are engaged in operations within the term of the contract on the site of work covering the use of all such motor vehicles unless such coverage is included in the insurance provided for under subsection "A" hereof.

(1714) RESPONSIBILITY FOR DAMAGE CLAIMS

The first paragraph of 1714 is revised to read as follows:

The Contractor shall indemnify and save harmless the State of Minnesota, the County of Blue Earth, their officers and employees from all suits, actions, and claims of any character brought because of injuries or damages received or sustained by any person, persons, or property on account of the operations of the said Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims arising or amounts recovered from infringements of patent, trademark, or copyright; or because of any claims arising or amounts recovered under the Worker's Compensation Act; or under any other law, ordinance, order or decree.

AFFIDAVIT OF NON-COLLISION

BIDDER _____

ADDRESS _____

I hereby swear (or affirm) under the penalty of perjury:

(1) That I am the bidder, (if the bidder is an individual), a partner in the bidder, (if the bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the bidder is a corporation);

(2) That the attached bid or bids have been arrived at by the bidder independently, and have been submitted without collusion with and without any agreement, understanding or planned common course of action with, any other vendor of materials, supplies, equipment, or services described in the invitation to bid, designed to limit independent bidding or competition;

(3) That the contents of the bid or bids have not been communicated by the bidder or its employees or agents to any person not an employee or agent of the bidder or its surety on any bond furnished with the bid or bids, and will not be communicated to any such person prior to the official opening of the bid or bids;

(4) That I have fully informed myself regarding the accuracy of the statements made in this affidavit.

Signed _____

Firm Name _____

Subscribed and sworn to before me

this_____ day of _____, _____

Notary Public

My Commission Expires _____

PROOF OF WORKER'S COMPENSATION INSURANCE COVERAGE

Minnesota Statute Section 176.182 requires every state and local licensing agency to withhold the issuance or renewal of a license or permit to operate a business in Minnesota until the applicant presents acceptable evidence of compliance with the workers' compensation insurance coverage requirement of Section 176.181, Subd. 2. The information required is: The name of the insurance company, the policy number, and dates of coverage or the permit to self-insure. This information will be collected by the licensing agency and put in their company file. It will be furnished , upon request, to the Department of Labor and Industry to check for compliance with Minnesota Statute Sec. 176.181, Subd. 2.

This information is required by law, and licenses and permits to operate a business may not be issued or renewed if it is not provided and/or is falsely reported. Furthermore, if this information is not provided and/or falsely reported, it may result in a $1,000 penalty assessed against the applicant by the Commissioner of the Department of Labor and Industry payable to the Special Compensation Fund.

Provide the information specified above in the spaces provided, or certify the precise reason your business is excluded from compliance with the insurance coverage requirement for workers' compensation.

Insurance Company Name _____
(NOT the insurance agent)

Policy Number or Self-insurance Permit Number: _____

Dates of Coverage: _____

(or)

I am not required to have worker's compensation liability coverage because:

( ) I have no employees covered by the law.

( ) Other (Specify)_____

_____

_____

I HAVE READ AND UNDERSTAND MY RIGHTS AND OBLIGATIONS WITH REGARDS TO BUSINESS LICENSES, PERMITS, AND WORKER'S COMPENSATION COVERAGE, AND I CERTIFY THAT THE INFORMATION PROVIDED IS TRUE AND CORRECT.

_____
(SIGNATURE)

NON-COLLUSION AFFIDAVIT

The following Non-Collusion Affidavit shall be executed by the bidder:

State Project No. _____

Federal Project No. _____

State of Minnesota _____)

) ss

County of _____)

I, _____, do state under penalty of
(name of person signing this affidavit)

perjury under 28 U.S.C. 1746 of the laws of the United States:

(1) that I am the authorized representative of _____

_____
(name of person, partnership or corporation submitting this proposal)

and that I have the authority to make this affidavit for and on behalf of said bidder;

(2) that, in connection with this proposal, the said bidder has not either directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding;

(3) that, to the best of my knowledge and belief, the contents of this proposal have not been communicated by the bidder or by any of his/her employees or agents to any person who is not an employee or agent of the bidder or of the surety on any bond furnished with the proposal and will not be communicated to any person who is not an employee or agent of the bidder or of said surety prior to the official opening of the proposal, and

(4) that I have fully informed myself regarding the accuracy of the statements made in this affidavit.

Signed: _____
(bidder or his authorized representative)

10/13/2010

Contract No.: 10852

Blue Earth
Schedule Of Prices By Category By Contract Projects

Project Number: SAP 007-598-026

Project Title or Road Number: Contract No.: 10852 - SAP 007-598-026 - CR 152, BRIDGE NO. 07557

Work Type: SAP 007-598-026 - Bridge Replacement

BIDDER MUST FILL IN UNIT PRICES IN NUMERALS; MAKE EXTENSION FOR EACH ITEM AND TOTAL. FOR COMPLETE INFORMATION CONCERNING THESE ITEMS, SEE PLANS AND SPECIFICATIONS, INCLUDING SPECIAL PROVISIONS.					
Item No.	Description	Units	Quantity	Unit Price	Total Price
Project SAP 007-598-026					
NON-PARTICIPATING					
2101.502	CLEARING	TREE	192.00		
2101.507	GRUBBING	TREE	169.00		
2104.501	REMOVE PIPE CULVERTS	LIN FT	136.00		
2104.501	REMOVE FENCE	LIN FT	610.00		
2104.501	REMOVE GUARD RAIL	LIN FT	430.00		
2104.501	REMOVE ROAD TILE	LIN FT	500.00		
2104.509	REMOVE BOX CULVERT	EACH	1.00		
2105.501	COMMON EXCAVATION (P)	CU YD	17,786.00		
2118.501	AGGREGATE SURFACING CLASS 1 MOD	TON	1,755.00		
2118.501	AGGREGATE SURFACING CLASS 2 MODIFIED	TON	150.00		
2211.501	AGGREGATE BASE CLASS 5	TON	230.00		
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	28.00		
2360.501	TYPE SP 19.0 WEARING COURSE MIXTURE (2,B)	TON	140.00		
2442.501	REMOVE EXISTING BRIDGE	LUMP SUM	1.00		
2501.511	18" CS PIPE CULVERT	LIN FT	196.00		
2501.511	60" RC PIPE CULVERT CLASS II	LIN FT	74.00		
2501.515	18" GS PIPE APRON	EACH	8.00		
2501.515	60" RC PIPE APRON	EACH	2.00		
2511.501	RANDOM RIPRAP CLASS III	CU YD	85.00		
2573.502	SILT FENCE, TYPE HEAVY DUTY	LIN FT	347.00		

BIDDER MUST FILL IN UNIT PRICES IN NUMERALS; MAKE EXTENSION FOR EACH ITEM AND TOTAL. FOR COMPLETE INFORMATION CONCERNING THESE ITEMS, SEE PLANS AND SPECIFICATIONS, INCLUDING SPECIAL PROVISIONS.					
Item No.	Description	Units	Quantity	Unit Price	Total Price
2573.502	SILT FENCE, TYPE MACHINE SLICED	LIN FT	557.00		
2573.505	FLOTATION SILT CURTAIN TYPE MOVING WATER	LIN FT	90.00		
2573.512	TEMPORARY DITCH CHECK TYPE 2	LIN FT	585.00		
2573.513	TEMPORARY DITCH CHECK TYPE 7	CU YD	18.00		
2573.520	SEDIMENT REMOVAL BACKHOE	HOUR	3.00		
2573.540	FILTER LOG TYPE STRAW BIOROLL	LIN FT	347.00		
2573.550	EROSION CONTROL SUPERVISOR	LUMP SUM	1.00		
2573.602	TEMPORARY SEDIMENT TRAP	EACH	3.00		
2575.501	SEEDING	ACRE	9.00		
2575.502	SEED MIXTURE 150	POUND	83.00		
2575.502	SEED MIXTURE 280	POUND	347.00		
2575.511	MULCH MATERIAL TYPE 1	TON	18.00		
2575.519	DISK ANCHORING	ACRE	9.00		
2575.523	EROSION CONTROL BLANKETS CATEGORY 4	SQ YD	1,804.00		
2575.532	COMMERCIAL FERTILIZER ANALYSIS 20-10-20	POUND	2,432.00		
2575.560	HYDRAULIC SOIL STABILIZER TYPE 5	POUND	900.00		
				Total NON-PARTICIPATING	
PARTICIPATING					
2021.501	MOBILIZATION	LUMP SUM	1.00		
2401.501	STRUCTURAL CONCRETE (3Y43) (P)	CU YD	75.00		
2401.512	BRIDGE SLAB CONCRETE (3Y33A) (P)	SQ FT	2,725.00		
2401.541	REINFORCEMENT BARS (EPOXY COATED) (P)	POUND	21,620.00		
2401.601	STRUCTURE EXCAVATION	LUMP SUM	1.00		
2401.601	SLOPE PREPARATION	LUMP SUM	1.00		

BIDDER MUST FILL IN UNIT PRICES IN NUMERALS; MAKE EXTENSION FOR EACH ITEM AND TOTAL. FOR COMPLETE INFORMATION CONCERNING THESE ITEMS, SEE PLANS AND SPECIFICATIONS, INCLUDING SPECIAL PROVISIONS.					
Item No.	Description	Units	Quantity	Unit Price	Total Price
2402.521	STRUCTURAL STEEL (3306) (P)	POUND	480.00		
2402.584	STRUCTURAL TUBE RAILING DESIGN SPECIAL (P)	LIN FT	169.00		
2402.590	ELASTOMERIC BEARING PAD TYPE 1 (P)	EACH	8.00		
2405.502	PRESTRESSED CONCRETE BEAMS 36M (P)	LIN FT	339.00		
2405.511	DIAPHRAGMS FOR TYPE 36M PRESTRESSED BEAMS (P)	LIN FT	27.00		
2452.507	C-I-P CONCRETE PILING DELIVERED 12"	LIN FT	500.00		
2452.508	C-I-P CONCRETE PILING DRIVEN 12"	LIN FT	500.00		
2452.519	C-I-P CONCRETE TEST PILE 60 FT LONG 12"	EACH	2.00		
2452.602	PILE TIP PROTECTION 12"	EACH	12.00		
2502.601	DRAINAGE SYSTEM TYPE (B911)	LUMP SUM	1.00		
2511.501	RANDOM RIPRAP CLASS III	CU YD	298.00		
				Total PARTICIPATING	
				SAP 007-598-026 Project Total	
				Grand Total	

Bidder Name: _____

Bidder Address: _____

_____

Bidder Phone: _____

Bidder Signature: _____ **Date:** _____

TOTALS

_____ $_____

_____ $_____

_____ $_____

_____ $_____

_____ $_____

In accordance with 1210 of the Specifications, receipt is acknowledged of Addendum No._____ Dated _____

Addendum No._____ Dated _____ Addendum No._____ Dated_____Addendum No._____ Dated _____

Signed _____

Enclosed herewith find (certified check) (bidder's bond) in the amount of _____

_____ Dollars ($_____)

being at least 5% of the amount of the proposal, made payable to the County Treasurer of said county as a proposal guarantee which it is agreed by the undersigned will be forfeited in the event the Form of Contract and Bond is not executed, if awarded to the undersigned.

This Proposal dated the _____ day of _____, _____.

Signed:_____, P.O. Address_____,as an individual.

Signed: _____,for_____, a partnership.

Partners

{Name _____ Address _____

{

{Name _____ Address _____

{

{Name _____ Address _____

{

{Name _____ Address _____

Signed: _____, for _____

a corporation, incorporated under the laws of the State of _____

_____

Name of President Business Address

Corporate Seal

_____

Name of Secretary Business Address

_____

Name of Treasurer Business Address

Note: Signatures shall comply with 1206 of the Specifications.